

World Osteoporosis Day: how to spot the bone thinning condition early, and ways to head it off with the right diet and exercise

Osteoporosis is estimated to affect over 200 million people worldwide. Screening can spot the early stages of the bone thinning condition in women and men. Doing high-impact sports and weight training, having enough vitamin D and calcium in our diet, and not smoking or drinking, help maintain good bone density.

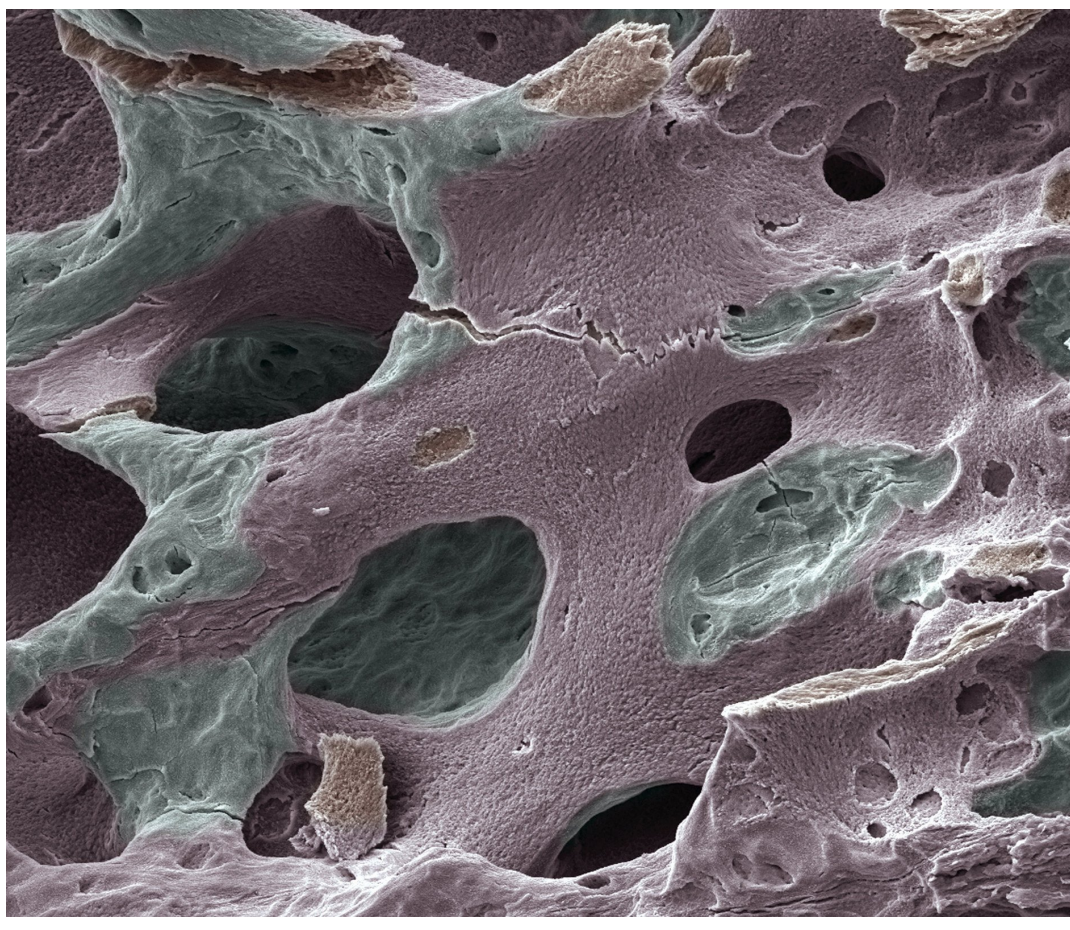


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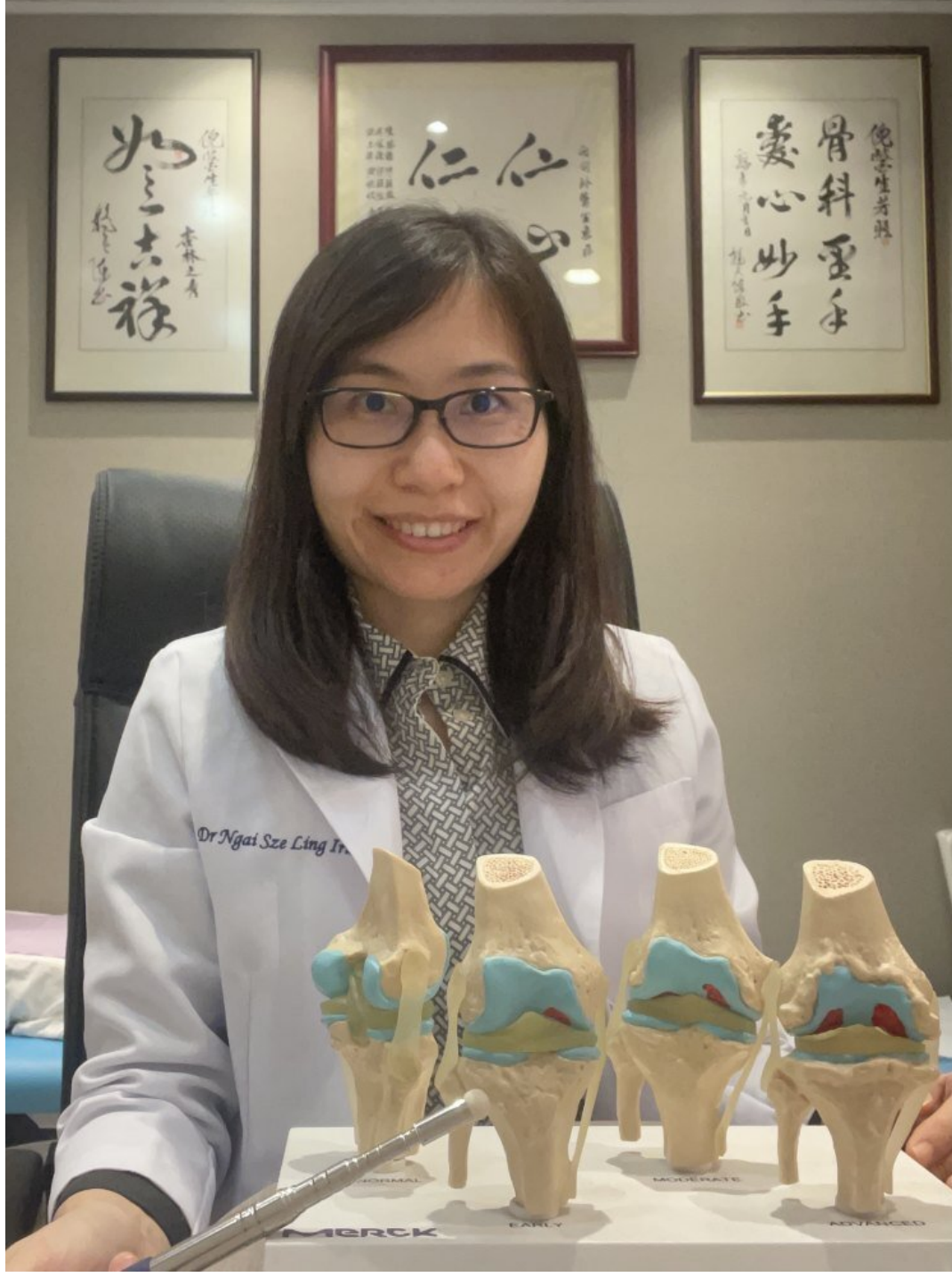
Scanning electron micrograph (SEM) of human bone showing osteoporosis. Photo: Getty Images

When I broke a rib for no apparent reason at the not-so-old age of 50, I quickly learned about a disease that is estimated to affect more than 200 million sufferers worldwide: osteoporosis.

Osteoporosis is “a condition where bones become weakened, decrease in ... density and lose their strength”, says Dr Iris Ngai Sze-ling, the honorary secretary of the Osteoporosis Society of Hong Kong.

Even a relatively gentle fall can cause a fracture, and the vertebrae in the spine can collapse, leading to an exaggerated forward rounding of the back, or kyphosis. The most common fracture sites, Ngai says, are the hip, the wrist and spine.

The structure of our bones resembles a honeycomb. When they become less dense, the holes in the “honeycomb” grow bigger, making the bone weaker and increasing the risk of sudden bone fractures.



Dr Iris Sze-ling Ngai, honorary secretary of the Osteoporosis Society of Hong Kong.

The older a person is, the more at risk they are, says Hong Kong orthopaedic surgeon Dr Jason Brockwell. But that doesn’t mean you have to be old to suffer, he says, noting that we usually reach peak bone mass at about 35 years of age. After that, it gradually declines.

“If you are lucky enough to live to a good age, you will run into osteoporosis,” he says ahead of World Osteoporosis Day on October 20.

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Women are more susceptible because generally they “live longer than men, they often suffer a rapid drop in bone density after menopause, and they start with lower peak bone mass because they are smaller than men”, Brockwell adds.

A third of women and a fifth of men over the age of 50 will sustain bone fractures caused by osteoporosis, says Ngai.

There are other reasons a person may be vulnerable. Brockwell says. “Those at the greatest risk of developing osteoporosis include people who smoke or drink heavily, have a low calcium intake, lack regular exercise, take certain medications such as steroids, and people with specific conditions such as rheumatoid arthritis.”



Orthopaedic surgeon Dr Jason Brockwell says we start to lose bone mass from 35 years old.

Excess alcohol consumption interferes with the balance of calcium – essential for bone health. So does smoking, which also compromises blood supply to the bones; that, in turn, slows the production of bone-forming cells. People who smoke and drink are less likely to be committed to physical exercise, which is effective in building and maintaining bone density.

Certain forms of exercise are much better than others. “The bones respond to stress by getting stronger – so high-impact sports and lifting weights help,” says Brockwell. These exercises are described as being highly osteogenic – or bone-producing: brisk walking is moderately so, whereas swimming is described as non-osteogenic, having no effect on bone production.

One of the biggest problems with osteoporosis is that it doesn’t make itself felt until there’s a fracture – it’s described as a silent disease. A sufferer who used only her first name, Carole, recounts her experience on Australia’s Healthy Bones website: cleaning a drain in her garden one day, she moved abruptly and immediately felt excruciating pain.



High-impact sports and lifting weights are recommended for maintaining bone density. Photo: Shutterstock

Many tests later it was established that her lumbar spine had collapsed and she had lost 70 per cent of her vertebrae.

She had always exercised, always been mindful of her diet – but she had ignored a bone scan at 50 which indicated osteopenia, the forerunner to osteoporosis. Treating the early loss of bone density could have spared Carole her fractures and her now chronic pain.

She urges people to get tested – a bone-density scan or DEXA scan using low-dose X-ray is easy and non-invasive, and indicates the strength and thickness, or density, of your bones.

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“Painful fractures of the spine, causing deformity and physical weakness, and fractures of the hip” are both common risks with osteoporosis, Brockwell says, and often require surgery to treat. Even then, he says, “there is a high rate of death and disability. Unfortunately, a broken hip in an old person is often fatal.”

Chiropractor Rin Park, who runs a spinal health centre in Hong Kong, agrees that early testing is the best way to protect yourself. “Most forms of treatment focus on stopping the condition from worsening rather than reversal. Catching it early puts you in a better position to prevent the condition from worsening,” Park says.

So what can we do to protect ourselves?

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“Be proactive from an early age,” says Brockwell. “Get plenty of calcium and vitamin D or take supplements. Vitamin D is found, for example, in oily fish, but the dietary raw material has to be converted into the active form by the action of sunlight on the skin” – so you need to get some sun.

“Many Asians value pale skin and stay out of the sun,” Brockwell says, and notes that vitamin D deficiency is common in Hong Kong – some estimates suggest up to 30 per cent of the population is deficient.

Brockwell also suggests that more women should have HRT – hormone replacement therapy. “There are many benefits, but reducing post-menopausal bone loss is one of them. HRT is woefully underused,” he says. Multiple studies have shown that HRT helps to increase bone mineral density, leading to a significant reduction in fractures.

Menopause, hormones and HRT: everything you need to know

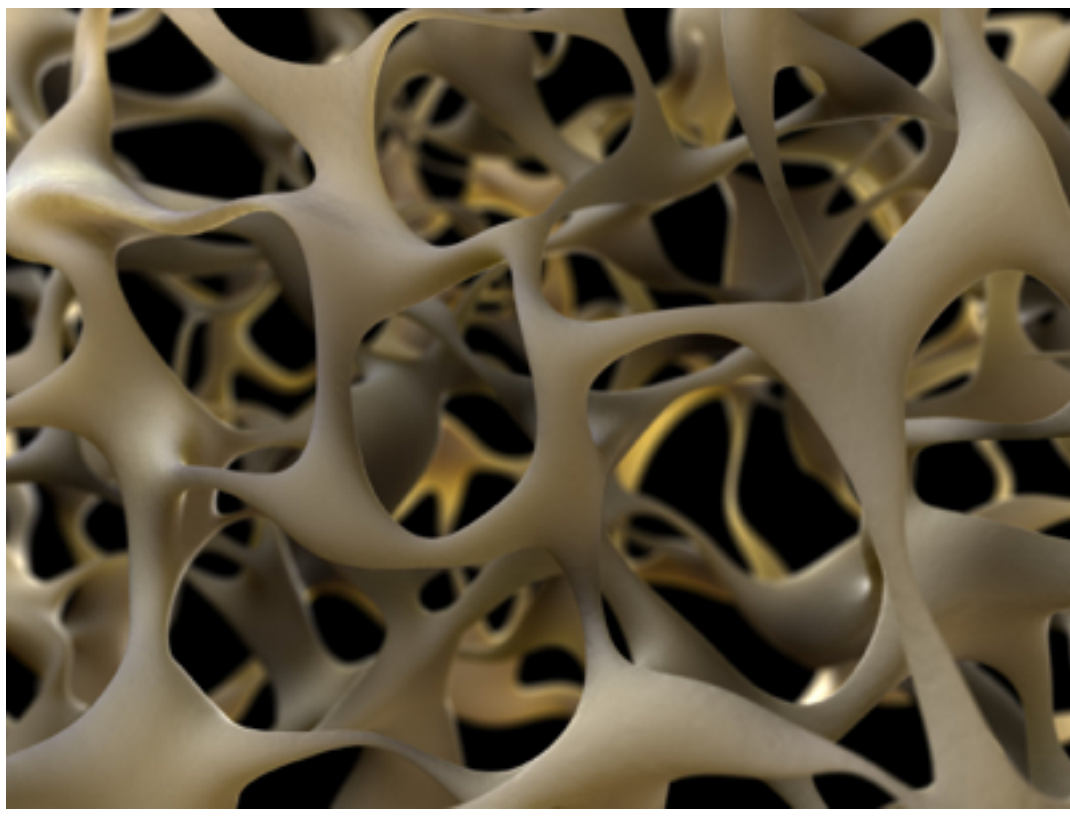
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It is difficult to increase bone density, Brockwell says. “Some new anabolic drugs (that aid in building up new bones from nutrients) help, but most drugs just slow down bone loss.” One such anabolic drug is romosozumab, sold under the brand name Evenity, which the Family Planning Association of Hong Kong has announced is available in Hong Kong.

Park points to “promising developments” in treating osteoporosis through mesenchymal stem cell transplants. “These help to rebalance the process of bone resorption (the breakdown of old bone) and formation. This rebalance involves increasing the formation of osteoblasts (cells responsible for new bone formation) and blocking the activation of osteoclasts (cells that break down bone tissue).”

Prevention, as always, is much better than any cure.



Osteoporosis causes bones to become less dense and more susceptible to fracture. Photo: Getty Images

How to identify osteoporosis early, and what to do

If you need to use your arms to help get up out of a chair or off the sofa, it may be a sign of weakening muscles – a good predictor of weakening bones. If leg muscles are weak, there is a greater chance of having a fall, and breaking a bone.

High levels of thyroid hormone can interfere with the formation of bone mass. An underactive thyroid, or hypothyroidism, is common. It’s key to have the right thyroid hormone in the right doses as overtreatment can lead to bone loss.

A study of 144,000 women found a link between osteoporosis and hearing loss. The tiny bones in the middle ear help transmit sound. If they are damaged by a loss of bone mass, impaired hearing is a consequence. So keep an ear on your hearing.



Don't always assume lower back pain is muscle-related. Photo: Getty Images

Don't always assume lower back pain is muscle-related. If it persists, get it checked out. Pain in the lumbar region could mean you’ve experienced a fracture as a result of undiagnosed osteoporosis, like Carole, and these spine fractures can be caused by something as benign as bending over to pick something light off the floor. For the same reason, if you think you’re getting shorter – get checked out, it could be your spine collapsing.

Some digestive diseases such as colitis and Crohn’s disease interfere with vitamin and mineral absorption. People suffering from gut or digestive-related issues often stick to rigid and restrictive diets – which may mean they’re missing out on key bone-building nutrients.

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