

Brittle Bones

by Dr Chua Soo Yong

Dealing with osteoporosis – the 'Silent' Disease



TWO YEARS AGO, in the early hours of a wet Sunday morning, I was asked to see Madam Liew, a petite lady in her 50s who slipped and fell and was brought in to the hospital by the ambulance for severe back pain. Initial assessments and radiological investigations showed that she had a mild compression fracture of her spine.

"But I've been healthy all my life! I've never seen a doctor before!" she quipped.

More detailed tests revealed that she had underlying osteoporosis which had not been treated before. Fortunately, she improved with non-operative treatment and was maintained on medication to increase her bone density. She has improved tremendously since then, and her bone density is on the upward trend. She happily declares to me, "I must tell all my friends about osteoporosis! It can be treated!"

How do I know I have osteoporosis – Can you give me the signs?

The truth of the matter is, osteoporosis has no symptoms; hence, the term

What is Osteoporosis?

Osteoporosis is a "silent" disease that leads to reduced bone mass and density. It can be the result of an underlying condition like hormonal imbalance, which we would term secondary osteoporosis, or due to ageing (senile type) or associated with menopause (post-menopausal type). The worldwide geographical prevalence is variable but estimated to be about 25% of people in the 70 to 79 age group (with women outnumbering men 2:1), and this is definitely set to rise in Singapore with the ageing population.

Osteoporosis is diagnosed by a few methods, but most commonly by a special test called DEXA (Dual-Energy X-ray Absorptiometry) which reports your Bone Mineral Density (BMD). A score then defines your bone density and subsequent categorisation into normal, osteopaenic or osteoporosis.

"silent" disease. The most common sign would be fracture. By the time it declares itself as a fracture, it is already too late to prevent. Hence, the most important treatment is prevention.

Osteoporotic fractures typically affect three regions – the spine, the wrist and the hip. Patients who sustain spinal osteoporotic fracture tend to present with back pain, a worsening stooped posture, or rarely, paralysis. Wrist fractures typically present when the patient falls on an outstretched

hand, and the wrist takes the brunt of the impact with a resultant deformed wrist, looking like a dinner fork. Hip fractures bring the worst news of them all. It is estimated that 800 to 900 hip fractures occur in Singapore every year due to osteoporosis. Over the past three decades, hip fractures in women aged 50 and above have increased five-fold from 75 cases to 402 cases per 100,000 of the population. Among men aged 50 and above, the increase was 1.5 times over the same period – from 103

cases to 152 cases per 100,000 of the population. The truly worrying saying that "hip fracture is the harbinger of death" is also very stark in Singapore's statistics. About one in five patients passes on within a year of sustaining an osteoporotic hip fracture, and one in three becomes wheelchair-bound or bedridden. Economically, the treatment cost for a hip fracture is \$5,800 on average, and this is expected to rise with increasing cost of healthcare. The treatment cost for osteoporotic fractures adds up to almost \$4.25 million a year in Singapore.

With so much bad news, how about some good news?

The good news is, osteoporosis is preventable to a certain extent based on the choices we make in life by modifying our risk factors. Because our bone mass peaks in young adulthood, measures to prevent its decline would be important to keep our bones strong while we continue to advance into twilight years. This includes weight-bearing exercises, which continue to stimulate our bones; a diet adequate in calcium and Vitamin D; exposure to sunlight; and avoiding smoking and excessive alcohol intake.

Am I at risk like Madam Liew?

Osteoporosis may affect anyone, but the following groups are more at risk:

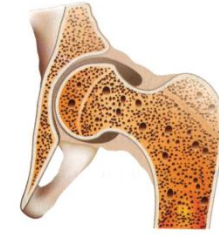
- **Gender** – Females are on the whole more at risk than men. They have smaller bones and they lose bone more rapidly than men due to the post-menopausal hormonal changes.
- **Age** – The older you are the higher the risk of osteoporosis. This is because our bone mass starts to decline after it reaches its peak in young adulthood.

OSTEOPOROSIS

NORMAL BONE



OSTEOPOROSIS



About one in five patients passes on within a year of sustaining an osteoporotic hip fracture, and one in three becomes wheelchair-bound or bedridden.

- **Race/Ethnicity** – Caucasians and Asians are at higher risk than darker skinned races.
- **Family history** – A positive family history will predispose one to osteoporosis.

You may wish to have a quick estimation of your risk of osteoporosis based on this one-minute quick questionnaire provided by the International Osteoporosis Foundation: www.iofbonehealth.org/iof-one-minute-osteoporosis-risk-test. You may also wish to calculate your own risk of fractures with this WHO tool provided online – Fracture Risk Assessment Tool (FRAX): www.shef.ac.uk/FRAX/tool.jsp.

So I have osteoporosis – Can you help me?

Although osteoporosis is a "silent" disease, the good news is that it is highly treatable.

For patients who have an underlying medical condition, for instance, a hormonal imbalance which led to osteoporosis, treating the underlying condition usually brings about resolution of the bone disease. Besides ensuring that you get

sufficient daily calcium and Vitamin D based on your age, activity and pregnancy status, your doctor will be the best person to advise you on special medications that are targeted at treating osteoporosis.

Essentially, medications either prevent further bone loss (anti-resorptive), or help to build up bone (anabolic). The anti-resorptive medications help your body retain the existing bone, while the body builds up its own bone thru regular diet, exercise and environmental stimulants. The anabolic medications actually directly stimulate bone growth. Each form of medication should only be started after consulting with your doctor, to find the most effective and safest form of treatment for yourself.

Speak Up, Create Awareness!

Osteoporosis may be a silent disease, but speaking up about it and creating awareness will help reduce the potential serious consequences of this highly treatable disease, and help us live through our happy and fruitful golden years. ^{eh}



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