

(BONE HEALTH)

# Breaking POINTS

IN AN AGEING POPULATION SUCH AS SINGAPORE'S,  
OSTEOPOROSIS IS A LARGE PART OF LIFE.  
*Lifewise* FINDS OUT HOW TO PREVENT THIS  
CONDITION, AND THE SAFEGUARDS FOR  
THOSE WHO HAVE IT.

BY NIRMALA SIVANATHAN

IN CONSULTATION WITH  
A/PROF LOW YIN PENG

EMERITUS CONSULTANT OF THE DEPARTMENT OF  
ORTHOPAEDIC SURGERY // TAN TOCK SENG HOSPITAL  
AND DR NOOR HAFIZAH

SENIOR CONSULTANT WITH THE DEPARTMENT  
OF CONTINUING AND COMMUNITY  
CARE // TAN TOCK SENG HOSPITAL



**THERE ARE NO VISIBLE SIGNS,** no pain and no symptoms in the early stages. In fact, most people don't realise they are suffering from osteoporosis until they break a bone — in situations where healthy people would not normally break one.

Osteoporosis is a stealthy disease, eating progressively and silently away at bones until they become weak and brittle. The condition results in the weakening of bones, and is caused by an imbalance between the natural cycle of bone building and bone destruction.

Fractures resulting from osteoporosis (called osteoporotic fractures) can lead to changes in posture, causing the development of a stoop or a Dowager's hump in the upper back. Muscle weakness, loss of height and bone deformities of the spine can result from the condition. These fractures can also cause chronic pain, disability and even premature death, and commonly occur in the rib, hip and wrist.

But what determines who would get osteoporosis? According to A/Prof Low Yin Peng, Emeritus Consultant of the Department of Orthopaedic Surgery at Tan Tock Seng Hospital (TTSH), genetics is the most important factor in the development

of osteoporosis. If you had a parent who suffered from it, chances are you are at risk of osteoporosis too.

Gender also plays a large part. Statistics have shown that women are four times more likely than men to develop osteoporosis. "This is because women have smaller skeletal frames and less bony tissue compared to men," says A/Prof Low.

Hormonal changes caused by ageing are also responsible for this gender disparity. In women, the production of the hormones oestrogen and progesterone comes to an end — around the ages of 45 to 55 — because of menopause. Most men however, will be able to produce the male hormone testosterone well into their 70s, thus heading off the threat of osteoporosis for longer. Yet, a minority of men will experience low testosterone levels prematurely — a treatable medical condition referred to as 'low-T'. For these men, the risk of osteoporotic fractures is as much of a threat as it is for women.

## Lurking Dangers

Bone structure and body weight also play a part. Men and women who are slimmer-built and with smaller frames are at a greater risk of developing osteoporosis. Studies have also found that weight loss in women who have turned 50 seems to increase the risk of hip fractures while weight gain decreases the risk.

Other risk factors include heavy alcohol consumption, early menopause, poor general health, a lifetime of low calcium intake, lack of regular exercise and smoking. In fact, a July 2012 study reported in the *Journal of Proteome Research* concluded that cigarette smoke causes people to produce excessive amounts of two proteins that trigger a natural body process to break down bone.

If you are worried about developing osteoporosis, you should talk to your doctor. Osteoporosis can be easily detected through a bone mineral density (BMD) test which will use a very small amount of



**DAIRY FOODS SUCH AS MILK AND CHEESE ARE WELL-KNOWN SOURCES OF CALCIUM, BUT IF YOU ARE SENSITIVE TO DAIRY PRODUCTS, TURN TO OTHER FOODS THAT ARE ALSO RICH SOURCES OF CALCIUM**

## WHAT IS OSTEOPENIA?

**Everybody begins to lose bone mass after they have reached peak bone mineral density (BMD) at about age 30. BMD is a measurement of the levels of minerals found in bones, which determines how dense and strong they are. When a person's BMD is lower than normal, he or she may have a condition called osteopenia, a result of having bones that are naturally thinner or contracting diseases such as arthritis and leukemia. Having osteopenia puts you at risk of developing osteoporosis. Osteopenia has no symptoms but as bones become thinner, the risk of fractures increases.**



radiation to determine the strength of your bones.

## Defensive Measures

The best way to combat osteoporosis is by preventing it. Dr Noor Hafizah, Senior Consultant with the Department of Continuing and Community Care at TTSH says, "You can lower your chances of developing osteoporosis by taking care of your bone health — and yes, it's better to start doing that while you're young."

According to the Harvard School of Public Health, adequate calcium intake — for both bone development and for non-bone functions — is key to reducing the risk of osteoporosis; however, the healthiest or safest amount of dietary calcium has not yet been established.

Dairy foods such as milk, cheese and yogurt are well-known sources of

## (BONE HEALTH)

calcium, but if you are lactose-intolerant or sensitive to dairy products, you can turn to other foods that are also rich sources of calcium. "Other sources of calcium which are equally effective include food made from soya beans such as tofu, as well as *ikan bilis* and dark green leafy vegetables," says A/Prof Low.

Another way to beat osteoporosis is by keeping fit. In a 2011 study conducted by the Institute of Endocrinology at Gunma University in Japan, scientists found that physical exercise can increase bone mineral density in post-menopausal women.

A/Prof Low also advises those who are at risk of osteoporosis to steer away from smoking and excessive consumption of alcohol and soft drinks as these hinder calcium absorption by the bones.

However, moderate alcohol intake may actually protect against bone loss, according to a study published in the journal *Menopause* in July this year. Researchers at Oregon State University in the United States observed 40 postmenopausal women who regularly had one or two alcoholic drinks each day but were not on hormone replacement therapies, and had no history of osteoporosis or bone fractures.

The women were asked to stop drinking

alcohol for two weeks. The researchers saw evidence of increased bone turnover, which is a risk factor for osteoporosis in post-menopausal women. But the researchers were surprised to see that when the subjects resumed their normal drinking habits, the bone turnover rates returned to previous levels — within less than a day.

“**THE GOOD NEWS FOR PEOPLE WHO ALREADY HAVE OSTEOPOROSIS IS THAT THERE ARE TREATMENTS AVAILABLE WHICH MAY HELP TO REVERSE THE CONDITION**”

The good news for people who already have osteoporosis is that there are treatments available which may help to reverse the condition. Calcium supplementation along with vitamin D to improve calcium absorption are usually recommended. For post-menopausal women, hormone replacement therapy may also be prescribed. **uw**



## STANDING STRONG

Many people with osteoporosis don't find out about their condition until after they experience an osteoporotic fracture, but Sabariah Binte Mohamed was lucky. The 61-year-old discovered her condition by chance during a routine health check up two years ago.

"Since my osteoporosis was still in its early stages, the doctor prescribed me daily calcium supplements and Vitamin D pills," says Sabariah who has fortunately never broken a bone. She was also told to eat more calcium-rich foods and to do light exercises to strengthen her bones.

The retiree takes extra care when doing household chores. "I make sure that the floor around me is clear, and not wet and slippery," she says. "Other than that, my osteoporosis has not affected me much. My family makes sure I don't have to perform tasks which might cause me to fall."

Sabariah's home has also been renovated to be elderly-friendly. "It is very useful for me to have gadgets [such as grab-poles in the toilet] installed, so I can move around with ease," she says. The fittings were originally put in for her father, who is in his 90s, but it has proved to be a boon for her.

## Best Foot Forward

About one in three seniors above the age of 65 will have a fall each year, according to the World Health Organization, and half of that number will suffer another fall. Dr Noor Hafizah recommends these safety tips.

▶ **Ask for help** when you need to reach a high cabinet or change a light bulb. Don't climb onto a chair or stool. Doing so may cause you to lose balance.

▶ **Pay attention to clothing;** trousers that are too long, clothes with gaping pockets and wide sleeves may catch on

things and throw you off balance.

▶ **Wear shoes with broad, rubber soles** to prevent slipping, and replace your shoes when the soles wear out. Avoid high heels and slippers.

▶ **Make sure you have good lighting** in your home. As you grow older, your

eyesight deteriorates. Your risk of falling increases as you may not be able to see your way clearly.

▶ **Find a place to sit or lie down** if you feel dizzy. Missing meals can cause weakness and dizziness so make sure to eat regularly, at least three times a day.