



Health **FRACTURES**

# INDIA'S BONE CRISIS

Indians are overly prone to fractured bones. New research brings to light risks for broken bones that lie hidden in everyday life.

By Damayanti Datta

From the CEO in the corner room to the newest executive on the front desk, they all fell one by one. The 59-year-old driving force behind the global R&D firm tripped over a pothole on Shanti Path in Delhi during an early morning jog and broke a leg. A few weeks later, his second-in-command hit a ball a bit too hard at a corporate football match and cracked his tarsal bones. The chief operating officer twisted his ankle on a treadmill. A mid-level executive took a tumble down the office stairs and fractured her hip. The young front desk manager slipped on polished granite at a city mall and is still nursing a hairline crack on her shin bone. A year of falls, fractures, casts and crutches that might just show up on the company bottomline.

India is a fractured society, not metaphorically, but in the physical sense. A new international report, *The Asian Audit*, by the International Osteoporosis Foundation, says over the past 30 years fractures have gone up threefold in Asia, with India and China topping the charts. India hobbles to second place in hip fractures with 4.4 lakh people falling prey every year. Currently, India has approxi-

**Fracture rates have gone up threefold over the last 30 years in Asia. India and China top the charts.**

**4.4 lakh Indians get hip fractures every year, a figure set to hit 6 lakh in 2020.**

Photograph by SANDEEP SINGH. Photo styling by SAURASHI SINGH/www.robotoximages.com

mately 26 million osteoporosis patients which is expected to reach 36 million by 2013. More serious is the fact that Indians are prone to fractures at a much younger age than their Western counterparts. Endocrinologist Dr Ambrish Mithal—the man who installed India's first bone density measuring system in 1997—predicts that over 50 per cent of the world's fractures are expected to occur in this region by 2050. "Indians have been found to have about 15 per cent lower bone density and it puts us at a greater risk of broken bones compared to Caucasians," points out Mithal, chief of endocrinology at Medanta Medicity in Gurgaon.

New research brings to light fracture risks that remain hidden in our everyday lives. Take the CEO. He is at an age when bone loss gathers momentum. Add to it the antacids, cardiac and diabetes drugs he has been popping for a long time. His second-in-command is fond of his daily glass of beer and smokes a pack of cigarettes a day. The chief operating officer has been off milk ever since his girth began to expand. The mid-level executive drinks endless cups of tea and coffee through the day. The young front desk manager, perpetually in pursuit of a size-zero body, is on a crash diet. Each of them carries risk factors for fractures in the way they live, work and play. This year, a pilot study led by Dr Ruchira Jha of Harvard Medical School, US, with Mithal at Indraprastha Apollo Hospital in Delhi shows why Indians are sitting ducks for fractures.

Couch potatoes and coffee-lovers, beware. Medics blame it all on lifestyle: poor eyesight to lack of agility, vegetarian diet to long-term pill-popping. At the top of the list are increased intake of bone toxins—alcohol, smoking, caffeine and carbonated drinks. In the study, individuals who drank a cup of tea or

coffee per day were two times more likely to get a fracture, while active people showed a 98 per cent lowering of fracture risk. Calcium-rich food reduced the risk (with one medium-sized serving of paneer a week bringing it down by 52 per cent), as did food rich in Vitamin D (fish lowered the risk by 86 per cent). Most fractures happened to thin people with a body-mass index of 20 or less, while their heavy counterparts showed a 19 per cent reduction in fracture risk.

In one corner of the biotechnology building at the All India Institute of Medical Sciences (AIIMS), Dr Nikhil Tandon, is peering into his computer screen where a host of pink arrows and moon-scape-like craters are representative of a spine. And a very brittle one, going by the holes and pores picked up by digital X-ray—a new technique. "We are working on the first large-scale study on fracture prevalence in India," says the professor of endocrinology. "Over 1,200 samples have been stored already." The task of analysing the data has started in right earnest. Things have come full circle

for Tandon and fellow researchers at AIIMS. From shock—when they first stumbled upon brittle bones in schoolchildren about a decade ago—to despair now. Every conceivable demographic they have studied in the last few years—infants, young adults, pregnant women, the elderly—echoes the same story.

Meantime, fractures feature more

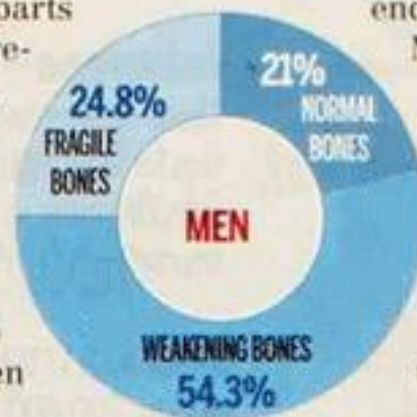
and more in hospital records. Any big hospital in India on an average day gets about 75 fresh fracture cases, with 5 to 8 bone surgeries, say experts. What's driving the rise? "Genetics is the most important factor that determines fracture risk," says Dr Rajesh Malhotra, professor of orthopedics at AIIMS. Add to it age, small stature, poor muscle mass and bone biology, explains Dr Usha Sriram,

endocrinologist with EVK Medical Centre in Chennai. On a scale of 0-10, if age and parental hip fractures merit 9, Sriram rates body frame a close 7. But both focus on modern life and the way we live: from sedentary life, poor vision, bone toxins to the absence of public a culture of safety and fall prevention. "Designer homes are a men-

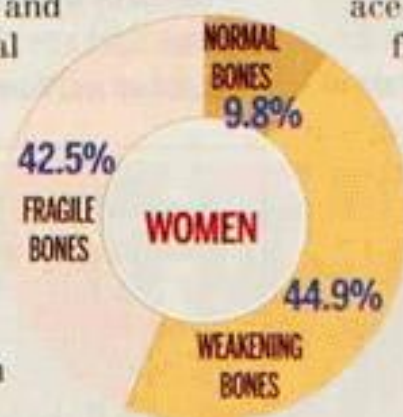
ace," says Malhotra. Polished floors, loose rugs cluttered around the house, poorly lit corners, fancy steps—medics find 45 per cent of patients slip, trip or stumble their way into fractures, often at home.

Who else is at risk? According to *The Asian Audit*, for every man three women suffer hip fractures every year

in India. Ask Geeta Puri, 66, former professor of political science at Delhi University. Despite being diagnosed with fragile bones in her 30s, she had carried on with her hectic lifestyle. Until one morning this year, when she woke up and just couldn't step out of bed. A bone scan found 80 per cent porosity. "New research indicates fragile bones among menopausal



**Bone status between age 50 and 80**



Source: *Bone Health in Healthy Indian Population Aged 50 years and Above*, 2010, R.K. Marwaha, N. Tandon et al.

Graphs by PUSHPINDER KALSI/www.indiatodaymag.com

**Indians have 15 per cent lower bone mineral levels than Westerners. Fractures happen 10-20 years earlier.**

**80 per cent of urban Indians are Vitamin D deficient and at risk of fracture, the majority being office workers.**

**50 million Indians are believed to be vulnerable to fractures.**

