

MEDIA RELEASE

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GARVAN INSTITUTE SCIENTISTS SUGGEST NEW APPROACH FOR TARGETING PATIENTS WITH BRITTLE BONES

Scientists from the Garvan Institute of Medical Research in Sydney, Australia, are suggesting a new approach to determining the risk of fracture in individuals with the brittle bone disease, osteoporosis, which could have treatment implications.

Their finding, published in the *Journal of Bone and Mineral Research*, is based on data from a fifteen-year epidemiology study and shows that calculating bone loss, by having at least two bone mineral density (BMD) measurements taken a minimum of 1-2 years apart, can improve the accuracy of fracture risk assessment.

Currently a bone density (DXA) scan is used to diagnose osteoporosis but, in Australia, treatment is usually only prescribed when an individual has had a fracture - regardless of BMD levels. Individuals with low BMD, despite being at high risk of fractures, are not commonly considered for drug treatment even though experts suggest that they should have preventative medication.

One in two women and one in three men over the age of 60 will have a fracture due to osteoporosis* and, with an ageing population, the total numbers of sufferers is increasing. Fractures are a major cause of pain, disability and premature death.

There are medicines available to treat those with brittle bones. Many clinical trials have shown that a drug that moderately increases BMD (e.g. by 3 to 4%) can reduce fracture risk by as much as half. The cost of measuring BMD by a DXA scan is relatively small, but the cost of treatment - if all individuals with low BMD are treated - is significant at the population level. The cost/benefit of mass screening of osteoporosis has been debated in Australia for some time and the issue boils down to how much money should be spent to prevent one fracture.

Associate Professor Tuan Nguyen, who is a joint head of the Epidemiology group of the Bone and Mineral Research Program at the Garvan Institute, says: "We know that low bone mineral density is the most important risk factor for fracture; paradoxically, almost half of women with fractures do not have low BMD. If we wish to treat those most at risk from osteoporotic fractures, a two-stage screening approach where individuals with low BMD and increased bone loss are treated could improve the cost-effectiveness".

*This adds up to 70,000 preventable fractures per year, with total direct and indirect costs running to over 7 billion dollars per year (Osteoporosis Australia).

ADDITIONAL INFORMATION

Eight hundred and fifty-eight men and 1358 women aged 60+ years (as at 1989) of Caucasian background participated in the Dubbo Osteoporosis Epidemiology Study.

Participants' BMD was measured up to 6 times by a special form of x-ray (DXA). Bone loss was calculated and related back to fractures recorded during the study to establish fracture risk. As fractures are relatively rare events, this is probably the only data in the world that could be used to investigate the link between bone loss and fracture risk.

This study was published in the Journal of Bone and Mineral Research, July 2005, Volume 20, Number 7 (<http://www.jbmr-online.com/fulltext/02007/11950/JBMR0200711950.html>).

Every 8 minutes, someone is admitted to an Australian hospital with an osteoporotic fracture. This is expected to rise to every 3-4 minutes by the year 2021. <http://www.osteoporosis.org.au/html/aboutosteomain.php>

ABOUT GARVAN

The Garvan Institute of Medical Research was founded in 1963 by the Sisters of Charity. Initially a small research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with over three hundred scientists, students and support staff. The Garvan Institute has six main research programs: Arthritis & Inflammation, Bone & Mineral, Cancer, Diabetes & Obesity, Neurobiology and Pituitary.

NOTES FOR EDITORS

Tuan Nguyen is a Senior Research Fellow in the Bone and Mineral Research Program at the Garvan Institute and an Associate Professor in the Faculty of Medicine, at the University of NSW.

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