

## **Low testosterone in men doubles their risk of bone fracture**

**15 January 2008**

Researchers at Sydney's Garvan Institute of Medical Research have shown that low levels of testosterone in men double their risk of bone fracture, all other risk factors being equal.

This is a significant finding given that 30% of the 110,000 osteoporotic fractures experienced in Australia each year occur in men.

The results, published yesterday in the prestigious international journal, *Archives of Internal Medicine*, were based on data taken from the internationally recognised Dubbo Osteoporosis Epidemiology Study.

The Dubbo study, which began in 1989, included about 1,000 men over 60 years of age. A variety of clinical information was obtained, including their weight, bone density, calcium intake, levels of physical activity, alcohol consumption, and whether or not they smoked.

In addition, blood samples were taken from 612 men between 1989 and 1993. Of these men, 110 subsequently sustained at least one bone fracture. This latter group had lower levels of the male sex hormone, testosterone.

"We compared the initial testosterone levels of those who later sustained a fracture, with the initial testosterone levels of those who did not," said Garvan's Associate Professor Tuan Nguyen. "Among the 25% of men with the lowest levels of testosterone at the beginning of the study, the risk of subsequent fracture was two-fold higher than in men with either normal or high levels of testosterone."

"This is a very significant finding. We estimated that approximately a quarter of all fractures in elderly men were attributable to low levels of testosterone. Remember these are men who were the same age and weight when their blood samples were taken. The effect of the sex hormone is therefore independent of age and weight. "

Professor John Eisman, Director of Garvan's Bone and Mineral Program, believes that the finding has implications for clinical practice. "A low level of testosterone can help to identify a subset of men at higher risk of bone fractures and for whom specific intervention, possibly including testosterone supplementation, makes good health care sense," he said.

"In addition, people need to apply common sense. Cutting down on alcohol, not smoking, maintaining an active lifestyle, getting some sunlight exposure and eating a diet rich in calcium will all help to minimise risk."

## **ABOUT GARVAN**

The Garvan Institute of Medical Research was founded in 1963. Initially a research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with approximately 400 scientists, students and support staff. Garvan's main research programs are: Cancer, Diabetes & Obesity, Arthritis & Immunology, Osteoporosis, and Neuroscience. The Garvan's mission is to make significant contributions to medical science that will change the directions of science and medicine and have major impacts on human health. The outcome of Garvan's discoveries is the development of better methods of diagnosis, treatment, and ultimately, prevention of disease.

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