

# Recurrent major depressive disorder and use of antidepressants associated with lower bone density

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A recent study from the University of Eastern Finland in collaboration with Deakin University, Australia, shows that recurrent major depressive disorder (MDD) in men is associated with lower bone density. The use of antidepressants was also associated with lower bone mineral density (BMD), but this association was dependent on the person's weight and site of bone measurement.

Osteoporosis is a common disorder and an underlying factor in fragility fractures. Especially in women, the menopause increases the risk of [osteoporosis](#). Other risk factors include low levels of physical activity, smoking, low intake of calcium and vitamin D, as well as some medications and diseases. In the elderly, susceptibility to fracture and serious hip fractures can result in long-term hospitalization and decreased state of health.

Previous studies have shown that also depression is associated with lower [bone density](#). This might be due to the effects of depression-induced long-term stress and increased secretion of inflammatory markers. Furthermore, selective serotonin reuptake inhibitors (SSRIs) used to treat depression have been shown to weaken [bone health](#). However, the majority of studies has focused on postmenopausal women. The present study analysed the association of single and recurrent MDD episodes and the use of antidepressants with bone density in men.

The study analysed data from the Geelong Osteoporosis Study, GOS, which is a large, ongoing, population-based osteoporosis study carried out in the Barwon Health hospital district in Australia. Between 2006 and 2011, 928 men (aged 24-98 years) completed a comprehensive questionnaire and had BMD assessments at the forearm, spine, total hip and total body. MDD was identified using a structured clinical interview. Multivariate model was adjusted for lifestyle, medications and other confounding factors.

Nine per cent of the study population had had a single MDD episode, and five per cent had suffered from recurrent MDD. Furthermore, seven per cent of the study participants reported the use of antidepressants at the time of assessment.

Recurrent MDD was associated with lower BMD at the forearm and total body (-6.5% and -2.5%, respectively compared to men with no history of MDD), while single MDD episodes were associated with higher BMD at the total hip (+3.4%).

Antidepressant use was associated with lower BMD only in lower-weight men and varied across the bone sites. For example, the use of antidepressants was associated with reduced bone density in the hip in men weighing less than 110 kilograms. In the forearm, however, the association of anti-depressants with reduced bone density was not observed in men until their body weight was under 75 kilograms.

According to the study, recurrent major [depression](#) may increase the risk of osteoporosis in men. Furthermore, the use of [antidepressants](#) should be taken into account as a potential risk factor of osteoporosis especially in [men](#) with a low body weight.

**More information:** "The association between major depressive disorder, use of antidepressants and bone mineral density (BMD) in

men." [www.ismni.org/jmni/](http://www.ismni.org/jmni/)

Provided by University of Eastern Finland

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