

Higher inflammation in older age is linked to lower bone density

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Poor bone health in older age is a leading cause of disability globally and has huge economic costs. Credit: University of Southampton

Although inflammation can arise from infection or injury, chronic inflammation can occur in older age due to ageing processes in the immune system. Higher levels of inflammation in older age has been linked to lower bone density, according to a new study carried out at the University of Southampton.

Scientists from the University's Medical Research Council Lifecourse Epidemiology Unit (MRC LEU) examined the relationship between

levels of inflammation in early old age and bone density at the spine and the hip. The relationship between levels of inflammation and change in bone density over the next 5 years was also explored.

The study, published in *Osteoporosis International*, showed that [higher levels](#) of adiponectin was related to lower bone density at the spine and hip, and lower levels of interleukin-10 (IL-10) was associated with faster decline in bone density at the spine. Adiponectin and IL-10 each modify the pro- and anti-inflammatory balance.

Lead author, Nicholas Fuggle, researcher at the University of Southampton, said "Low [bone density](#) increases the risk of osteoporosis which affects so many older people and is extremely debilitating. This study highlights the importance of inflammatory markers in the development of osteoporosis. We hope that this study will help us develop potential ways of combatting the condition which will lead to improvements in quality of life."

Professor Cyrus Cooper, Director of the MRC LEU, said: "Poor bone health in [older age](#) is a leading cause of disability worldwide and has huge economic costs for society. These results will inform the development of lifecourse intervention strategies to promote better musculoskeletal health in later life".

More information: N. R. Fuggle et al. Relationships between markers of inflammation and bone density: findings from the Hertfordshire Cohort Study, *Osteoporosis International* (2018). [DOI: 10.1007/s00198-018-4503-z](https://doi.org/10.1007/s00198-018-4503-z)

Provided by University of Southampton

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