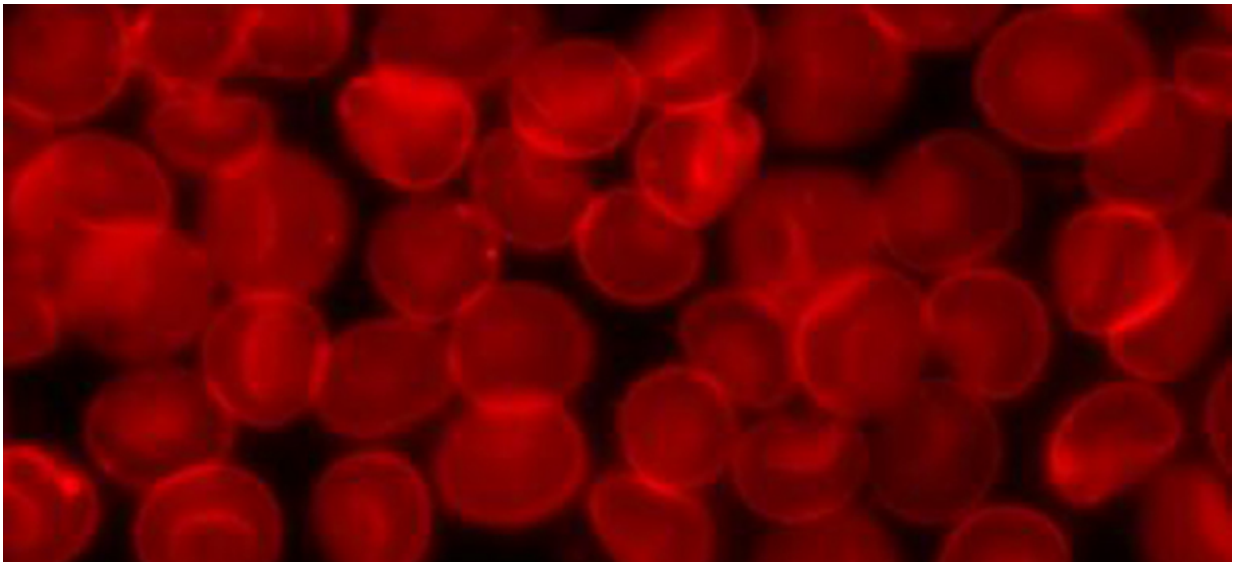


Proof that magnesium could prevent fractures

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Credit: Wikimedia Commons

Magnesium could hold the key to preventing one of the most preventable causes of disability in middle-aged to elderly people, according to new research led by academics at the Universities of Bristol and Eastern Finland.

Bone fractures are one of the leading causes of disability and ill health especially among the ageing population and this increases the burden on the health care system. It is well-known that calcium and vitamin D play

an important role in [bone](#) health. Magnesium is an essential nutrient and is an important component of the bone. Though there have been suggestions that magnesium may have a beneficial effect on [bone health](#), no study has been able to show its effect on [bone fractures](#).

Researchers at the Universities of Bristol and Eastern Finland followed 2,245 middle-aged men over a 20-year period. They found that men with lower [blood](#) levels of magnesium had an increased risk of fractures, particularly fractures of the hip. The risk of having a fracture was reduced by 44 per cent in men with higher blood levels of magnesium. None of the 22 men who had very high magnesium levels (> 2.3 mg/dl) in the study population experienced a fracture during the follow-up period. In the same study, dietary magnesium intake was not found to be linked with fractures. A finding that has been consistently demonstrated in several previous studies.

Dr Setor Kunutsor, Research Fellow from the University of Bristol's Musculoskeletal Research Unit and lead researcher, said: "The findings do suggest that avoiding low serum concentrations of magnesium may be a promising though unproven strategy for risk prevention of fractures."

Although blood levels of magnesium depend on magnesium intake from food and water, this may not be the case for the elderly, people with certain bowel disorders, and those on certain medications. For such people, increasing the intake of foods rich in magnesium may not necessarily increase blood magnesium levels. Treating the underlying conditions and magnesium supplementation may be another way of avoiding low blood levels of magnesium.

These new findings may have public health implications as low [blood levels](#) of magnesium are very common in the population. This is especially among middle-aged to elderly individuals who are also prone to fractures. Majority of these individuals do not experience any

symptoms. Since blood magnesium is not measured routinely in the hospital, individuals with low levels of magnesium are very difficult to identify. These findings could help trigger initiatives to include blood magnesium screening in routine blood panels, especially for the elderly.

Professor Jari Laukkanen from the University of Eastern Finland and principal investigator, said: "The overall evidence suggests that increasing serum magnesium concentrations may protect against the future risk of [fractures](#); however, well-designed [magnesium](#) supplementation trials are needed to investigate these potential therapeutic implications."

More information: 'Low serum magnesium levels are associated with increased risk of fractures: a long-term prospective cohort study' by Setor K. Kunutsor, Michael R. Whitehouse, Ashley W. Blom and Jari A. Laukkanen in *European Journal of Epidemiology* (2017).

Provided by University of Bristol

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