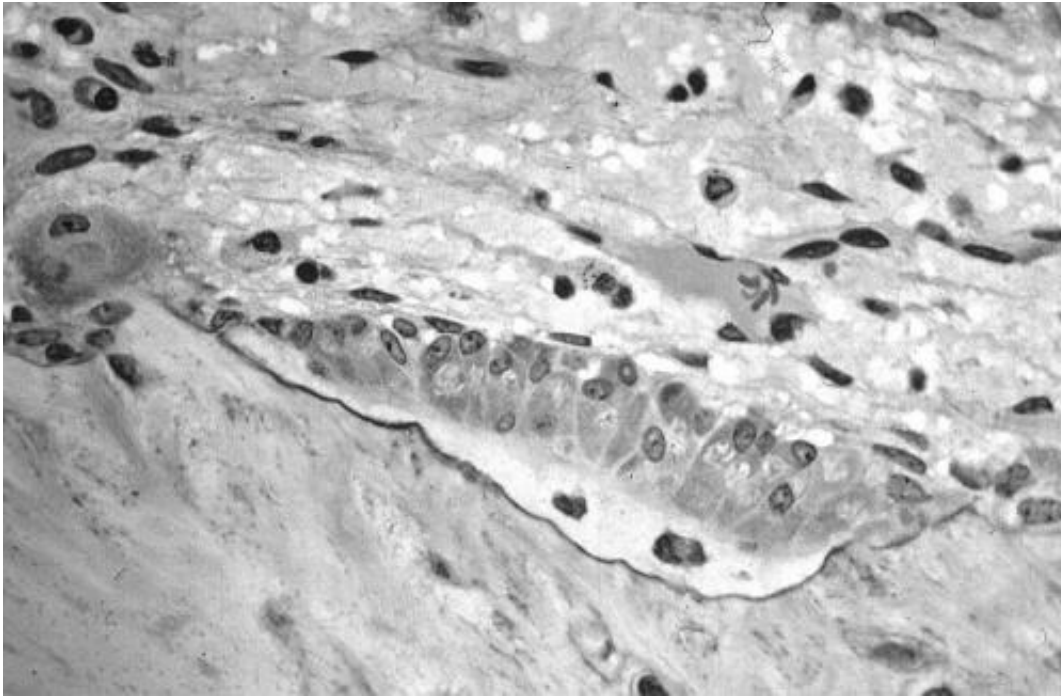


Risk of breaking a bone depends on where you live

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Osteoblasts actively synthesizing osteoid. Credit: Robert M. Hunt; Wikipedia.

Ethnicity, socioeconomic status and place of residence in the UK all influence the risk of breaking a bone, a new Southampton study has shown.

Researchers at the Medical Research Council Lifecourse Epidemiology Unit, University of Southampton, undertook an analysis of the UK Clinical Practice Research Datalink database and calculated the risk of

an individual experiencing a fracture. They also examined whether this risk varied according to age, sex, ethnicity, [socioeconomic status](#) and place of residence in the UK.

They found there were marked differences in fracture rates according to where individuals lived, with the highest fracture rates in Scotland and Northern Ireland, where rates were around 50 per cent greater than those in London.

In men, fracture rates were noticeably greater in areas of socioeconomic deprivation, possibly reflecting greater exposure to trauma through manual work, together with potentially greater rates of smoking and other adverse lifestyle factors, the researchers say.

They also found that white men and women had substantially greater fracture rates than Asian individuals. Black people had the lowest fracture rates - under half the rates in white individuals.

Overall fracture rate was higher for women over the age of 50 years old (155 per 10,000 persons per year compared to men over the age of 50 (72 per 10,000 persons per year).

The study was funded by the National Osteoporosis Society and published in the journal *Bone*.

Professor Nicholas Harvey, Professor of Rheumatology and Clinical Epidemiology at the MRC Lifecourse Epidemiology Unit, University of Southampton, led the study with Dr Elizabeth Curtis, Academic Clinical Fellow in Rheumatology. He said: "Our study has provided insights into factors that may influence fracture rates across different sections of the population. Further work will be needed to fully understand what underlies these differences, for example variations in diet, lifestyle, body build, employment and genetic factors may all contribute.

"However, our demonstration of differences in fracture rates by ethnicity, socioeconomic status and location will clearly be helpful in targeting health resources to those at greatest risk. Given the high rates of fracture, particularly in the elderly, and the impact in terms of pain, immobility and potentially reduced survival, our findings provide real support for health prevention strategies."

Fizz Thompson, Clinical and Operations Director at the National Osteoporosis Society, said: "Broken bones can have a devastating impact on people's lives. No-one should be left at greater risk because of where they live or how much money they have in their pocket. This research should act as an urgent wake-up call to local NHS decision makers. If they don't act decisively to prevent future fractures, local hospitals and GPs will continue to see fracture after fracture, at great cost to the NHS and even greater cost in quality of life.

"They can begin to solve this problem by having the right services and staffing in place to systematically identify those at high risk of breaking bones, assess them for osteoporosis and start them on treatment.

"Having top quality Fracture Liaison Services is key to this. They are the proven and cost-effective way of preventing fractures, saving the NHS money and improving the quality of people's lives. That's why the National Osteoporosis Society is working in partnership with health professionals across the UK to ensure everyone has access to these life changing services."

Professor Cyrus Cooper, Professor of Rheumatology and Director of the MRC Lifecourse Epidemiology Unit, University of Southampton, added: "This study forms part of a larger programme of work addressing risk factors for fracture across the lifecourse, and demonstrates the importance of the University of Southampton and MRC Lifecourse Epidemiology Unit in leading large, UK wide analyses on the

internationally leading UK Clinical Practice Research Datalink dataset. These findings will be built upon in a wider programme of analyses to document the burden of osteoporotic fracture in the UK, and will have important messages for public health planning in future years."

More information: Elizabeth M. Curtis et al. Epidemiology of fractures in the United Kingdom 1988–2012: Variation with age, sex, geography, ethnicity and socioeconomic status, *Bone* (2016). [DOI: 10.1016/j.bone.2016.03.006](https://doi.org/10.1016/j.bone.2016.03.006)

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