

Osteoporosis linked with heart disease in older people

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University of Southampton scientists have discovered a link between coronary heart disease and osteoporosis, suggesting both conditions could have similar causes.

In one of the first studies of its kind to use a special scanning technique, researchers found that people with a history of heart disease had substantially lower cortical volumetric bone mineral density in their wrist bone (the [distal radius](#)) than those without.

Using a state-of-the-art technique called 'high resolution peripheral quantitative computed tomography', researchers from Southampton's Medical Research Council (MRC) Lifecourse Epidemiology Unit were able to visualise multiple layers of the wrist bone, in much the same way a 3D printer might build up layers of an object. These cross section visuals were used to assess symptoms of osteoporosis - a condition that weakens bones, making them more vulnerable to fractures and breaks.

The technique was used on 350 men and women, aged 70 - 85, who had enrolled on the Hertfordshire Cohort Study. The findings, published today in *Osteoporosis International*, show that cortical volumetric [bone mineral](#) density was lower among participants with [coronary heart disease](#) (or [ischaemic heart disease](#)) such as angina, heart attack or heart failure. The effect was more prominent in women than in men.

Professor Cyrus Cooper, Director of the MRC Lifecourse Epidemiology Unit and Professor of Rheumatology at the University of Southampton,

says: "This is one of the first studies to use this technology to explore bone geometry, density and microstructure in patients with heart disease. The findings highlight the need to evaluate a history of heart disease in the management of osteoporosis in older people and further research is also needed to provide a better understanding of the underlying mechanisms which explain the link between osteoporosis and heart disease."

Dr. Julien Paccou, Clinical Research Fellow at the MRC Lifecourse Epidemiology Unit, University of Southampton, added: "In essence, this work and others show that people with a history of cardiovascular disease tend to have weaker bones. There is a need to better understand this association to improve bone health."

The study Ischemic [heart disease](#) is associated with lower cortical volumetric [bone mineral density](#) of distal radius was funded by the Medical Research Council.

Provided by University of Southampton

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