

# Long-term unemployment may accelerate aging in men

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Men who are unemployed for more than two years show signs of faster ageing in their DNA, a new study has found.

Researchers at Imperial College London and the University of Oulu, Finland studied DNA samples from 5,620 [men and women](#) born in Finland in 1966.

They measured structures called telomeres, which lie at the ends of chromosomes and protect the genetic code from being degraded. Telomeres become shorter over a person's lifetime, and their length is considered a marker for biological ageing. Short telomeres are linked to higher risk of age-related diseases such as type 2 diabetes and heart disease.

The researchers looked at [telomere length](#) in blood cells from samples collected in 1997, when the participants were all 31 years old. The study, funded by the Wellcome Trust, found that men who had been unemployed for more than two of the preceding three years were more than twice as likely to have short telomeres compared to men who were continuously employed,.

The analysis accounted for other social, biological and behavioural factors that could have affected the result, helping to rule out the possibility that short telomeres were linked to medical conditions that prevented participants from working.

This trend was not seen in women, which may be because fewer women than men in the study were unemployed for long periods in their 30s. Whether long-term [unemployment](#) is more harmful for [men](#) than women later in life needs to be addressed in future studies.

The Imperial team included Dr Jessica Buxton and Professors Marjo-Riitta Jarvelin and Alexandra Blakemore.

Dr Buxton, from the Department of Medicine at Imperial College London, said: "Shorter telomeres are linked to higher risk of various age-related diseases and earlier death. Stressful life experiences in childhood and adulthood have previously been linked to accelerated [telomere](#) shortening. We have now shown that long-term unemployment may cause premature ageing too".

Dr Leena Ala-Mursula, from the University of Oulu, said: "There has been lots of research linking long-term unemployment with ill health. This is the first study to show this type of effect at a cellular level. These findings raise concerns about the long-term effects of joblessness in early adulthood. Keeping people in work should be an essential part of general health promotion."

**More information:** Leena Ala-Mursula et al. 'Long-term unemployment is associated with short telomeres in 31-year-old men: an observational study in the Northern Finland Birth Cohort 1966.' *PLOS ONE*, 20 November 2013. [dx.plos.org/10.1371/journal.pone.0080094](https://doi.org/10.1371/journal.pone.0080094)

Provided by Imperial College London

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