

Genes reveal clues about people's potential life expectancy

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Scientists say they can predict whether a person can expect to live longer or die sooner than average, by looking at their DNA.

The team has analysed the combined effect of genetic variations that influence lifespan to produce a [scoring system](#).

People who score in the top ten per cent of the population might expect to live up to five years longer than those who score in the lowest ten per cent, they say.

The findings also revealed fresh insights into diseases and the biological mechanisms involved in ageing, the researchers say.

Experts at the University of Edinburgh's Usher Institute looked at [genetic data](#) from more than half a million people alongside records of their parents' lifespan.

Some 12 areas of the human genome were pinpointed as having a significant impact on lifespan, including five sites that have not been reported before.

The DNA sites with the greatest impact on overall lifespan were those that have previously been linked to fatal illnesses, including [heart disease](#) and smoking-related conditions.

Genes that have been linked to other cancers, not directly associated with smoking, did not show up in this study, however.

This suggests that susceptibility to death caused by these cancers is either a result of rarer genetic differences in affected people, or social and environmental factors.

The researchers had hoped to discover [genes](#) that directly influence how quickly people age. They say that if such genes exist, their effects were too small to be detected in this study.

The research, published in the journal eLife, was funded by the UK Medical Research Council and the AXA Research Fund.

Dr. Peter Joshi, an AXA Fellow at the University of Edinburgh's Usher Institute, said: "If we take 100 people at birth, or later, and use our lifespan score to divide them into ten groups, the top group will live five years longer than the bottom on average."

Paul Timmers, Ph.D. student at the Usher Institute, said "We found genes that affect the brain and the heart are responsible for most of the variation in [lifespan](#)."

More information: Paul RHJ Timmers et al, Genomics of 1 million parent lifespans implicates novel pathways and common diseases and distinguishes survival chances, *eLife* (2019). [DOI: 10.7554/eLife.39856](https://doi.org/10.7554/eLife.39856)

Provided by University of Edinburgh

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