

Low income, poor diet linked to accelerated aging

July 28 2011

A new study of the DNA of people living in Glasgow suggests that earning less than the average wage and eating an unhealthy diet could accelerate the ageing process.

The study, conducted by the University of Glasgow in collaboration with the Glasgow Centre for [Population Health](#), compared the length of [telomeres](#) in [blood samples](#) taken from 382 Glaswegians from the most and least deprived parts of the city. Telomeres, the tails on the ends of [chromosomes](#), shorten throughout a person's life and can be used as a measure of the [ageing process](#).

Over a 10-year period, telomeres shortened by 7.7% in people whose household incomes were less than £25,000, but only 0.6% in people with greater incomes. In those living in rented accommodation, telomere length was reduced by 8.7% compared to 2.2% in those who owned their homes. The telomeres of people with the poorest diets were shortened by 7.7%, compared to 1.8% in those with a better diet.

It is hoped that the findings will help to create a test which can be used for faster feedback on the effects of public health improvement measures. Currently, these effects can take decades to become apparent.

However, due to natural variation in telomere length from person to person, the test is only effective at a population level, and will not provide useful information on how long an individual can expect to live.

Dr. Paul Shiels of the University of Glasgow's Institute of Cancer Sciences, who led this aspect of the research, said: "Glasgow's population has one of the most extreme socioeconomic gradients in the world, which makes it an ideal place to conduct a study such as this.

"This study is a first for the city in that it provides a link between how adverse social conditions can influence the biology of ageing and hence disease. What we've shown is that social status and deprivation play a major part in how quickly people age and develop disease.

"Eating poorly and earning less than average is likely to increase the rate you age, and can lead to increased inflammation and risk for cardiovascular disease, which is endemic in the city."

The results are published in the journal *PLoS one* by the Glasgow Centre for Public Health, a consortium of health and local authorities, the Scottish Government and the University of Glasgow.

Provided by University of Glasgow

Citation: Low income, poor diet linked to accelerated aging (2011, July 28) retrieved 25 April 2024 from <https://medicalxpress.com/news/2011-07-income-poor-diet-linked-aging.html>

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