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Less education related to faster aging

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(Medical Xpress) -- People who leave education with fewer qualifications are prone to age more quickly, according to a new study funded by the Medical Research Council (MRC) and the British Heart Foundation.

Researchers from University College London examined the length of 'telomeres' from around 450 participants in the ongoing Whitehall II cohort study. Telomeres are sections of DNA that 'cap' chromosomes, protecting them from damage and the loss of cell functions associated with ageing. Shorter telomeres are thought to be an indicator of faster ageing. The Whitehall II cohort study was set up in 1985 to investigate the importance of social class for health, by following a cohort of over 10,000 working men and women.

The study participants were separated into four education groups; those who had no qualifications at all, those who left formal education after attaining O-levels, those who left after attaining A-levels and those who attained a degree from a higher education institution. The results showed that people with lower educational attainment had shorter telomeres, indicating that they may age faster. The study also provided strong evidence that this is not affected by people's social and economic status later in life, as was previously thought.

Andrew Steptoe, British Heart Foundation Professor of Psychology and the lead author of the study, said: "We already know from previous research that people with poor backgrounds are prone to age more quickly. Education is a marker of social class that people acquire early in

life, and our research suggests that it is long term exposure to the conditions of lower status that promotes accelerated cellular ageing. Neither current household income nor employment grade was related to telomere length."

Professor Stephen Holgate, Chair of the MRC's Population and Systems Medicine Board which funded the research, said: "The key implication of this study backs up one of the main messages to have come out of long-term studies funded by the Medical Research Council for over half a century; that your experiences early in life can have important influences on your health. Whilst – as with all observational research – it is difficult to establish the root causes of the findings, this study does provide evidence that being educated to a higher level can benefit you more than in the job market alone."

The researchers were based primarily at University College London, but also collaborated with Professor Jorge Erusalimsky from the University of Wales Institute, Cardiff and Professor Elizabeth Blackburn from the University of California, San Francisco. In 2009 Professor Blackburn was awarded the Nobel Prize for her work on the protein telomerase, an enzyme involved in maintaining telomeres.

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation (BHF) who co-funded the study, said: "People in the most deprived groups are at greater risk of disease - including heart disease - than people in the most affluent groups. This study found that lower academic attainment is associated with premature ageing of cells in the body. This research reinforces the need to tackle social inequalities to combat ill health. It's not acceptable that where you live or how much you earn – or lesser academic attainment – should put you at greater risk of ill health."

More information: The paper, 'Educational attainment but not

measures of current socioeconomic circumstances are associated with leukocyte telomere length in healthy older men and women' by Steptoe, et al., is published online today by the journal *Brain, Behavior, and Immunity*.

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