

# Researchers find link between neighborhood quality and cellular aging

June 18 2015

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Regardless of chronological age, people who live in neighborhoods with high crime, noise and vandalism are biologically more than a decade older than those who do not, according to a study led by researchers from the University of Pittsburgh. The findings were published online today in *PLOS One*.

Strong research evidence supports that living in disadvantaged neighborhoods has an unfavorable impact on mental and physical health, explained lead author Mijung Park, Ph.D., M.P.H., R.N., assistant professor, University of Pittsburgh School of Nursing.

'Our team examined whether these environments also have a direct impact on cellular health,' she said. 'We found that indeed, biological aging processes could be influenced by [socioeconomic conditions](#).'

The research team focused on telomeres, which are stretches of DNA at the ends of chromosomes that often are compared to caps on shoelaces because they protect the DNA strands from damage. Telomeres get trimmed each time the cell divides because they are not fully copied by enzyme mechanisms, and it is thought that aging occurs when the telomeres become too short for DNA replication and cell division to proceed normally. Telomere shortening can be accelerated with exposure to biological or psychological stresses such as cancer, anxiety and depression, Park said.

Working with researchers from Amsterdam, the team examined

telomere length in [white blood cells](#) of 2,902 Dutch individuals participating in the Netherlands Study of Depression and Anxiety and determined the quality of the neighborhoods in which they resided using measures of perceived neighborhood disorder, fear of crime and noise. They found that the telomeres of people reporting poor neighborhood quality were significantly shorter than [telomeres](#) of those who did not.

'The differences in [telomere length](#) between the two groups were comparable to 12 years in [chronological age](#),' Park said. 'It's possible that their cells are chronically activated in response to psychological and physiological stresses created by disadvantaged socioeconomic, political and emotional circumstances.'

Provided by University of Pittsburgh Schools of the Health Sciences

Citation: Researchers find link between neighborhood quality and cellular aging (2015, June 18) retrieved 19 April 2024 from

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