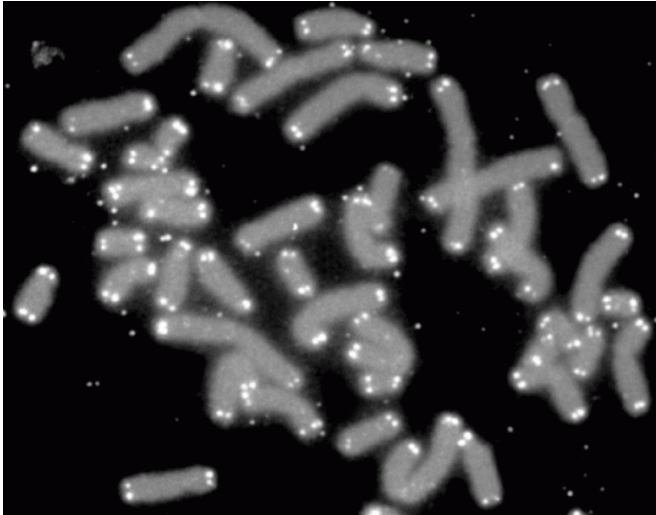


Genetic determinants of telomere length in African American youth

25 September 2018



Human chromosomes (grey) capped by telomeres (white). Credit: PD-NASA; PD-USGOV-NASA

Telomeres are DNA-protein structures that play a vital role in maintaining DNA stability and integrity. Telomere length (TL) is an important biomarker of aging and overall health, but TL has been mostly studied in adult populations of European or Asian ancestry.

CUNY SPH Professor Luisa N. Borrell was one of the senior authors of the first genome-wide association study of TL among African American youth, published in the journal *Scientific Reports*.

The study notes that the lack of research on factors affecting TL in pediatric and non-European populations creates a knowledge gap in the scientific understanding of gene-environment interactions regulating telomeres. Epidemiologic studies reporting associations between TL and disease risk are potentially biased by the disease itself or exposures relating to treatment. Genetic proxies for TL have recently been employed to overcome these and other potential biases, such

as social and environmental exposures. A problematic assumption when using genetic proxies for TL is that they are generalizable across age and racial/ethnic groups.

Borrell and colleagues measured TL from whole blood samples of 492 healthy African American youth (children and adolescents between 8 and 20 years old) and were unable to replicate either the 34 reported [genetic associations](#) found in adults or the six genetic associations found in European children. The study also identified novel genetic associations with TL that have not been identified in previous studies in pediatric or adult populations. The findings suggest that genetic markers of TL are not generalizable across all populations.

"Our results underscore the importance of examining genetic associations with TL in diverse pediatric populations such as African Americans and call attention to include Hispanic pediatric [population](#), an admixture population when it comes to ancestry, in TL studies," says Borrell.

In order to fully understand the impacts of age and population effects on the genetic regulation of TL, further [telomere](#) research is needed in pediatric populations from diverse ancestral backgrounds, Borrell says.

More information: Andrew M. Zeiger et al. Genetic Determinants of Telomere Length in African American Youth, *Scientific Reports* (2018). DOI: [10.1038/s41598-018-31238-3](https://doi.org/10.1038/s41598-018-31238-3)

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