

Leukocyte Telomere Length in Young Adults Born Preterm: Support for Accelerated Biological Ageing

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Conclusion

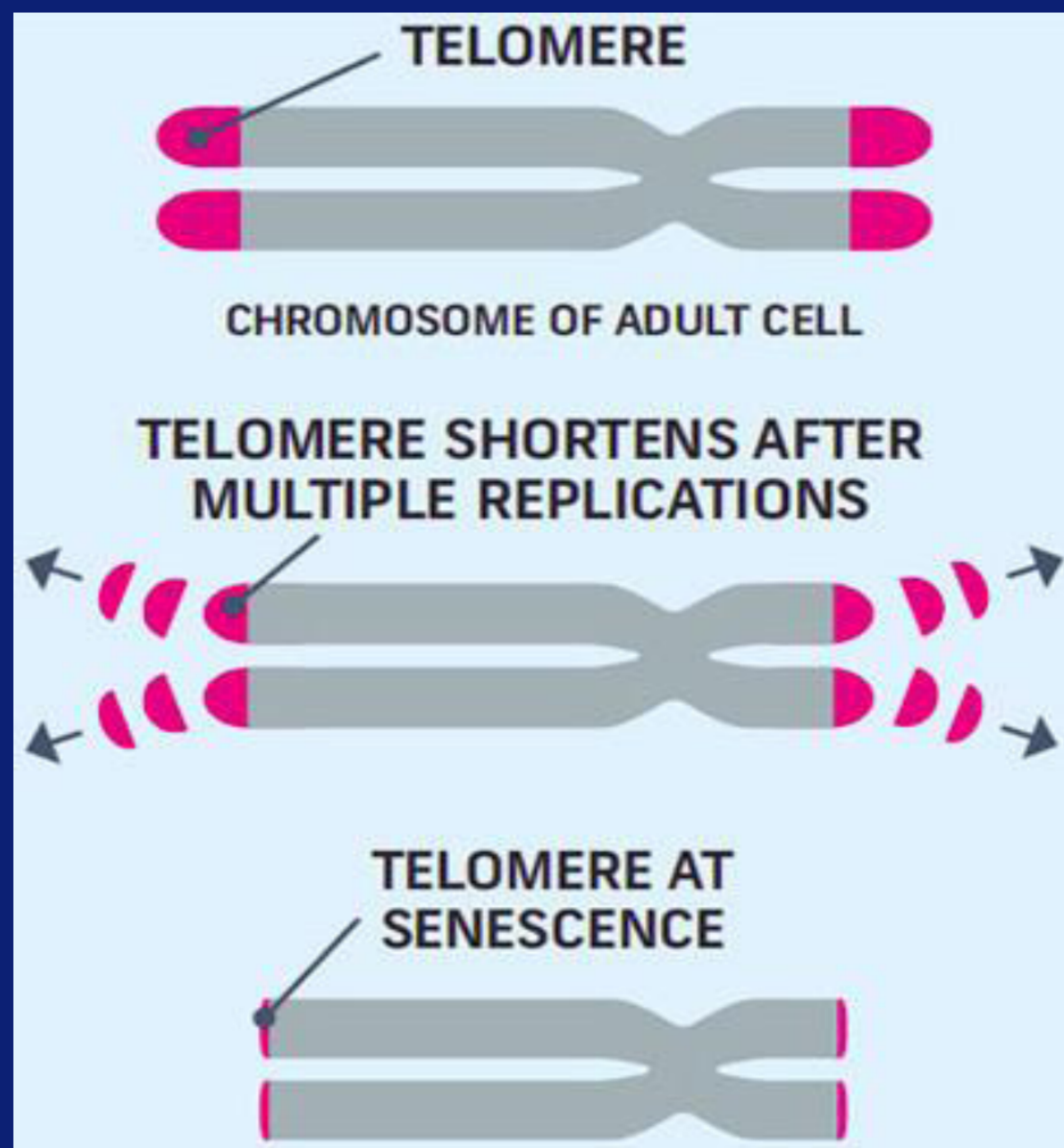
Young adults born preterm have shorter telomeres than young adults born at term, equivalent to a difference in biological age of approximately 5-12 years at the same calendar age. This could partly explain the observed association between preterm birth and the increased future risk of age-associated diseases such as cardiovascular disease.

Background

5-13% of all newborns in developed countries is born preterm (i.e. gestational age <37 wks).

Subjects born preterm have an increased risk for age-associated diseases, such as cardiovascular disease (CVD), in later life but the underlying causes are largely unknown.

Leukocyte telomere length (LTL) is a marker of biological age and is associated with increased risk of CVD.



Source: National Institute on Aging

Methods

We measured LTL in 470 young adults using a quantitative PCR assay, expressing LTL as T/S ratio.

We analyzed the influence of gestational age on LTL and compared LTL between subjects born preterm (n=186) and at term (n=284).

Additionally, we analyzed the correlation between LTL and putative risk factors of CVD.

Objective

To investigate whether LTL could explain the observed association between preterm birth and future risk of age-associated diseases such as CVD.

Results

Gestational age was positively associated with LTL ($r = 0.11$, $p=0.02$).

Subjects born preterm had shorter LTL (mean (SD) T/S ratio = 3.12 (0.44)) than subjects born at term (mean (SD) T/S ratio = 3.25 (0.46)), $p=0.003$, equivalent to a difference of approximately 180 base pairs.

The difference in mean LTL remained significant after adjustment for gender and size at birth ($p=0.001$).

There was no association of LTL with body composition, lipid levels, blood pressure and insulin sensitivity.

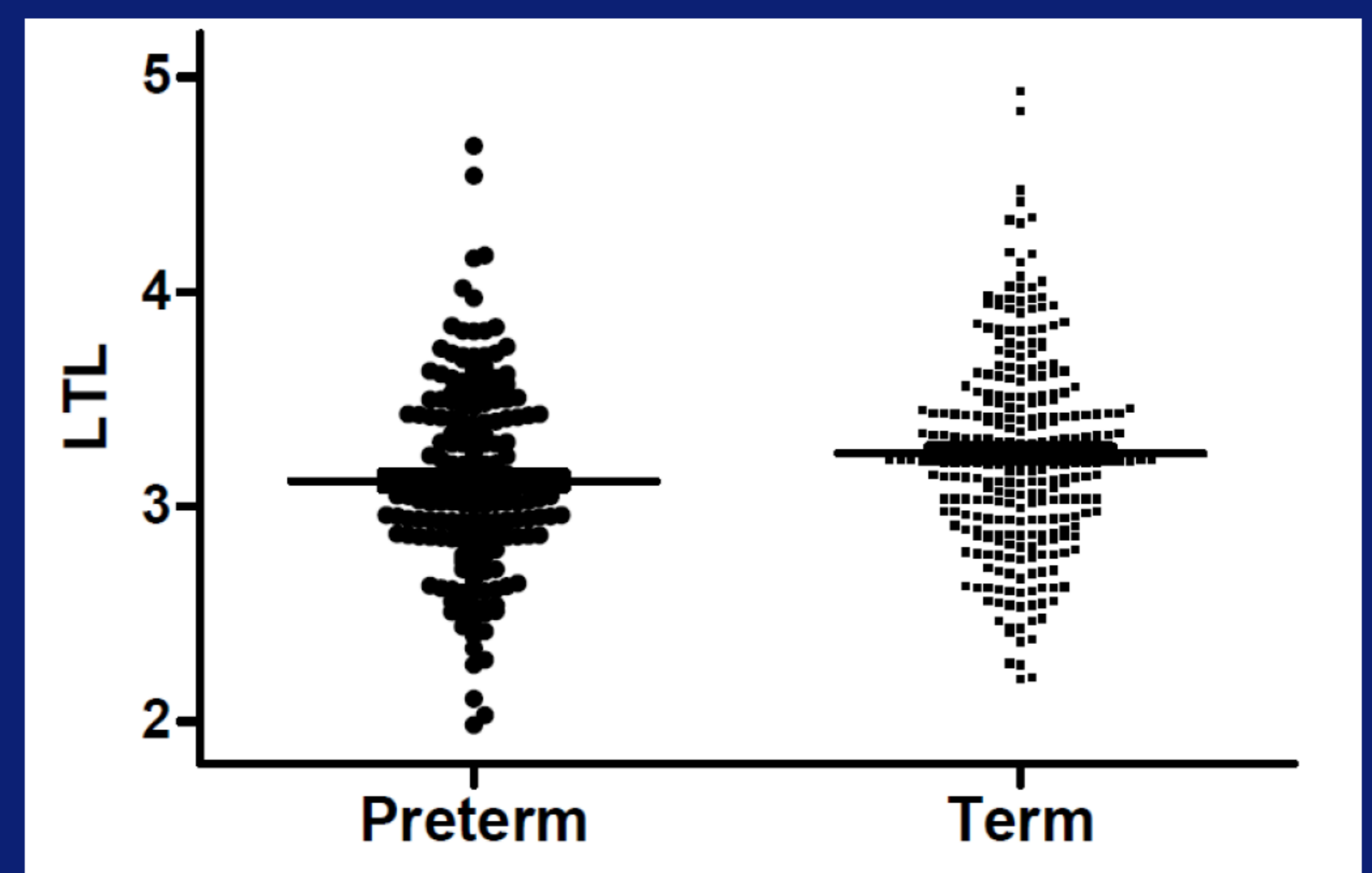


Figure 1: Distributions of mean telomere lengths in subjects born preterm and at term

No conflict of interest

