



### Recent Publications in Telomeres: Dec 2020 – Jan 2021

*a quarterly collection from the Telomere Research Network, featuring recent publications in population-based telomere research*

#### **Research Articles:**

##### **Methodology**

Hastings W, Shalev I. Uninterruptible Power Supply Improves Precision of Telomere Length Measurement via qPCR. *Innov Aging*. 2020;4(Suppl 1):250. Published 2020 Dec 16. doi:10.1093/geroni/igaa057.806  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7740344/>

Sethi I, Bhat GR, Kumar R, Rai E, Sharma S. Dual labeled fluorescence probe based qPCR assay to measure the telomere length. *Gene*. 2021;767:145178. doi:10.1016/j.gene.2020.145178  
<https://www.sciencedirect.com/science/article/pii/S0378111920308477>

##### **Environmental Exposures**

Brown R, Hailu EM, Needham BL, et al. Neighborhood social environment and changes in leukocyte telomere length: The Multi-Ethnic Study of Atherosclerosis (MESA). *Health Place*. 2021;67:102488. doi:10.1016/j.healthplace.2020.102488  
<https://www.sciencedirect.com/science/article/pii/S1353829220318827?via%3Dihub>

Wang T, Tu Y, Zhang G, et al. Development of a benchmark dose for lead-exposure based on its induction of micronuclei, telomere length changes and hematological toxicity. *Environ Int*. 2020;145:106129. doi:10.1016/j.envint.2020.106129  
<https://pubmed.ncbi.nlm.nih.gov/32950787/>

Zhang B, Liu L, Guo L, et al. Telomere length mediates the association between polycyclic aromatic hydrocarbons exposure and abnormal glucose level among Chinese coke oven plant workers. *Chemosphere*. 2021;266:129111. doi:10.1016/j.chemosphere.2020.129111  
<https://pubmed.ncbi.nlm.nih.gov/33310362/>

Pavanello S, Campisi M, Mastrangelo G, Hoxha M, Bollati V. The effects of everyday-life exposure to polycyclic aromatic hydrocarbons on biological age indicators. *Environ Health*. 2020;19(1):128. Published 2020 Dec 3. doi:10.1186/s12940-020-00669-9  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7713168/>

Yu SN, Chen SQ, Fan GQ, et al. Relative Telomere Length in Peripheral Blood Cells and Hypertension Risk among Mine Workers: A Case-Control Study in Chinese Coal Miners. *Biomed Res Int*. 2020;2020:5681096. Published 2020 Dec 3. doi:10.1155/2020/5681096  
<https://www.hindawi.com/journals/bmri/2020/5681096/>



## Telomere Length Across the Life Course

Izano MA, Cushing LJ, Lin J, et al. The association of maternal psychosocial stress with newborn telomere length. *PLoS One*. 2020;15(12):e0242064. Published 2020 Dec 10. doi:10.1371/journal.pone.0242064 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7728273/>

Minamoto T, Nakayama K, Ishibashi T, et al. Pregnancy by Assisted Reproductive Technology Is Associated with Shorter Telomere Length in Neonates. *Int J Mol Sci*. 2020;21(24):9688. Published 2020 Dec 18. doi:10.3390/ijms21249688 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7766074/>

Huang Z, Liu C, Ruan Y, et al. Dynamics of leukocyte telomere length in adults aged 50 and older: a longitudinal population-based cohort study [published online ahead of print, 2021 Jan 19]. *Geroscience*. 2021;10.1007/s11357-020-00320-y. doi:10.1007/s11357-020-00320-y <https://link.springer.com/article/10.1007%2Fs11357-020-00320-y>

## Gene Associations and GWAS

Ruoqing C, Yiqiang Z. Association between telomere length and Parkinson's disease: a Mendelian randomization study. *Neurobiology of Aging*, 2021;97,144.e9-144.e11. <https://doi.org/10.1016/j.neurobiolaging.2020.07.019>

Goswami A, Huda N, Yasmin T, Hosen MI, Hasan AKMM, Nabi AHMN. Association study of leukocyte telomere length and genetic polymorphism within hTERT promoter with type 2 diabetes in Bangladeshi population. *Mol Biol Rep*. 2021;48(1):285-295. doi:10.1007/s11033-020-06045-7 <https://link.springer.com/article/10.1007%2Fs11033-020-06045-7>

Kalungi A, Kinyanda E, Womersley JS, et al. TERT rs2736100 and TERC rs16847897 genotypes moderate the association between internalizing mental disorders and accelerated telomere length attrition among HIV+ children and adolescents in Uganda. *BMC Med Genomics*. 2021;14(1):15. Published 2021 Jan 6. doi:10.1186/s12920-020-00857-z <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7789327/>

## Other Biological Associations

Starnino L, Dupuis G, Busque L, et al. The associations of hostility and defensiveness with telomere length are influenced by sex and health status. *Biol Sex Differ*. 2021;12(1):2. Published 2021 Jan 4. doi:10.1186/s13293-020-00349-w <https://bsd.biomedcentral.com/articles/10.1186/s13293-020-00349-w>

Isehunwa, OO, Warner, ET, Spiegelman, D. et al. Depression, Religiosity, and Telomere Length in the Study on Stress, Spirituality, and Health (SSSH). *Int J Ment Health Addiction* (2021). <https://doi.org/10.1007/s11469-020-00455-1>



Ooi DSQ, Dorajoo R, Gurung RL, et al. Association of leukocyte telomere length with obesity-related traits in Asian children with early-onset obesity [published online ahead of print, 2021 Jan 26]. *Pediatr Obes*. 2021;e12771. doi:10.1111/ijpo.12771  
<https://onlinelibrary.wiley.com/doi/10.1111/ijpo.12771>

### **Reviews and Meta-Analyses**

Navarro-Mateu F, Husky M, Cayuela-Fuentes P, et al. The association of telomere length with substance use disorders: a systematic review and meta-analysis of observational studies [published online ahead of print, 2020 Nov 3]. *Addiction*. 2020;10.1111/add.15312. doi:10.1111/add.15312  
<https://onlinelibrary.wiley.com/doi/10.1111/add.15312>

Cherfils-Vicini J, Gilson É. Longevity clocks: The promoting role of telomeres? [French]. *Med Sci (Paris)*. 2020;36(12):1113-1117. doi:10.1051/medsci/2020242  
<https://pubmed.ncbi.nlm.nih.gov/33296627/>

Silva Pinto BG, Marques Soares TK, Azevedo Linhares M, Castilhos Ghisi N. Occupational exposure to pesticides: Genetic danger to farmworkers and manufacturing workers - A meta-analytical review. *The Science of the Total Environment*. 2020 Dec;748:141382. DOI: 10.1016/j.scitotenv.2020.141382.  
<https://www.sciencedirect.com/science/article/pii/S0048969720349111>

Di Micco, R., Krizhanovsky, V., Baker, D. *et al.* Cellular senescence in ageing: from mechanisms to therapeutic opportunities. *Nat Rev Mol Cell Biol* 22, 75–95 (2021). <https://doi.org/10.1038/s41580-020-00314-w>

Fan YL, Ye Q. A concise review of telomere and telomerase-related genetic markers in fibrotic lung diseases [Chinese]. *Chinese journal of industrial hygiene and occupational diseases*, 38(12), 952–956. doi:10.3760/cma.j.cn121094-20200305-00104  
<https://pubmed.ncbi.nlm.nih.gov/33406566/>

Kameda M, Mikawa T, Yokode M, Inagaki N, Kondoh H. Senescence research from historical theory to future clinical application. *Geriatr Gerontol Int*. 2021;21(2):125-130. doi:10.1111/ggi.14121  
<https://onlinelibrary.wiley.com/doi/10.1111/ggi.14121>

Sławińska N, Krupa R. Molecular Aspects of Senescence and Organismal Ageing-DNA Damage Response, Telomeres, Inflammation and Chromatin. *Int J Mol Sci*. 2021;22(2):590. Published 2021 Jan 8. doi:10.3390/ijms22020590  
<https://pubmed.ncbi.nlm.nih.gov/33435578/>

McKnight I, Hart C, Park IH, Shim JW. Genes causing congenital hydrocephalus: Their chromosomal characteristics of telomere proximity and DNA compositions. *Exp Neurol*. 2021;335:113523. doi:10.1016/j.expneurol.2020.113523  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7750280/>



Godhamgaonkar AA, Sundrani DP, Joshi SR. Role of maternal nutrition and oxidative stress in placental telomere attrition in women with preeclampsia. *Hypertens Pregnancy*. 2021;40(1):63-74.

doi:10.1080/10641955.2020.1869248

<https://www.tandfonline.com/doi/abs/10.1080/10641955.2020.1869248?journalCode=ihip20>

Pietri P, Stefanadis C. Cardiovascular Aging and Longevity: JACC State-of-the-Art Review. *J Am Coll Cardiol*. 2021;77(2):189-204. doi:10.1016/j.jacc.2020.11.023

<https://www.sciencedirect.com/science/article/pii/S0735109720378682?via%3Dihub>

Omote N, Sauler M. Non-coding RNAs as Regulators of Cellular Senescence in Idiopathic Pulmonary Fibrosis and Chronic Obstructive Pulmonary Disease. *Front Med (Lausanne)*. 2020;7:603047. Published 2020 Dec 23. doi:10.3389/fmed.2020.603047

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7785852/>