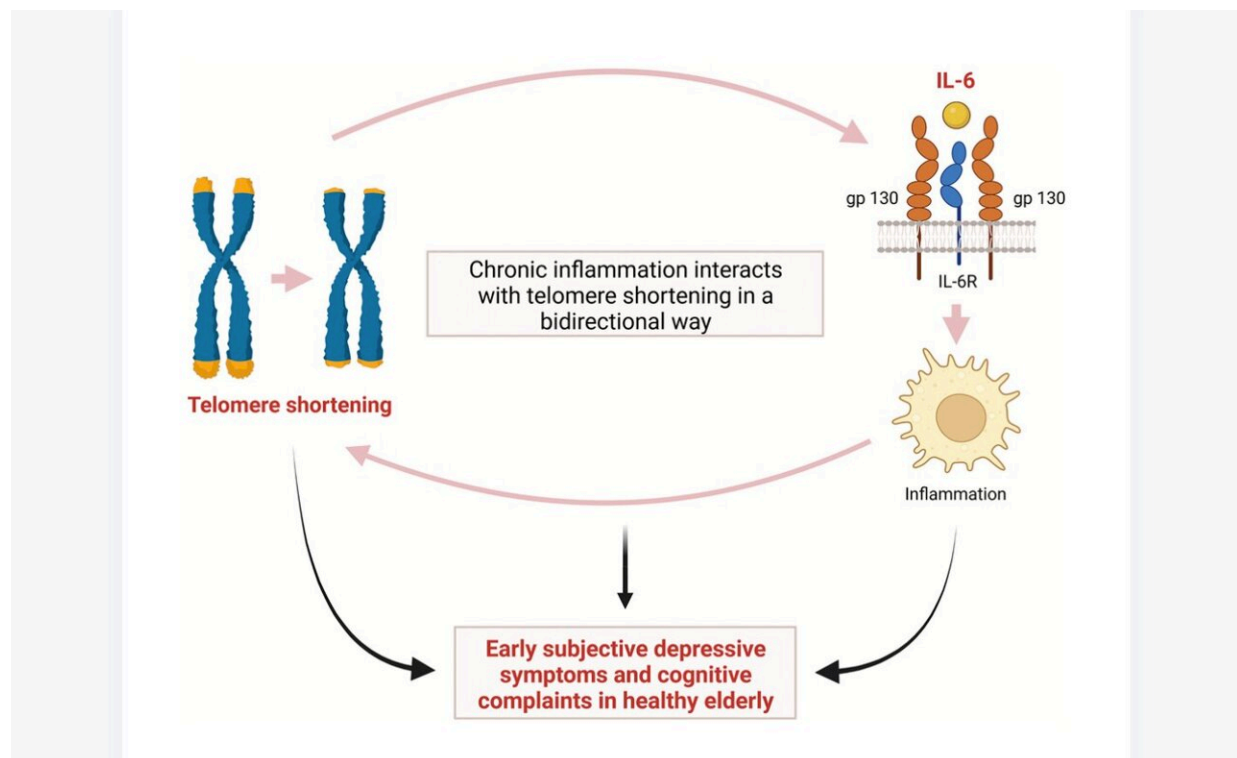


Telomere shortening linked to depression and cognitive impairment in older adults

February 28 2023



Hypothetical interaction between telomere shortening and inflammation induced by IL-6 leading to early subjective depressive symptoms and cognitive complaints in relatively healthy elderly. Credit: 2023 Han et al.

A new research paper titled "Relationship between telomere shortening and early subjective depressive symptoms and cognitive complaints in older adults" has been published in *Aging*.

Telomere length (TL) has been reported to be associated with depression and [cognitive impairment](#) in the elderly. Early detection of depression and cognitive impairment is important to delay [disease progression](#). Therefore, in this new study, researchers Myung-Hoon Han, Eun-Hye Lee², Hyun-Hee Park, Seong Hye Choi, and Seong-Ho Koh from Hanyang University and Inha University aimed to identify whether TL is associated with early subjective depressive symptoms and cognitive complaints among healthy elderly subjects.

"Several hypotheses have been proposed to explain the emergence of a prematurely aged phenotype in late-life depression, such as glucocorticoid cascade dysregulation, increased allostatic load, and telomere shortening," the researchers write.

This study was a multicenter, outcome assessor-blinded, 24-week, randomized controlled trial (RCT). Measurement of questionnaire and physical activity scores and blood sample analyses were performed at baseline and after six months of follow-up in all study participants. Linear regression analyses were performed to identify whether early subjective depressive symptoms, cognitive complaints, and several blood biomarkers are associated with TL.

Altogether, 137 relatively healthy elderly individuals (60–79 years old) were enrolled in this prospective RCT. The team observed an approximate decrease of 0.06 and 0.11–0.14 kbps of TL per one point increase in the geriatric depression scale and cognitive complaint interview scores, respectively, at baseline and after six months of follow-up. They also found an approximate decrease of 0.08–0.09 kbps of TL per one point increase in interleukin (IL)-6 levels at baseline and after six months of follow-up.

"In conclusion, we showed that both early subjective depressive symptoms and cognitive complaints in relatively healthy elderly

individuals were associated with a relatively shorter TL in the randomized controlled prospective SUPERBRAIN study. In addition, a shorter TL was associated with increased IL-6 levels in our study participants. We believe that IL-6, an inflammatory cytokine, plays an important role in the relationship of shortening TL with early subjective depressive mood and cognitive complaints. Although the results will need to be verified through a large-scale RCT in the future, we believe that our findings will help prevent and treat depression and cognitive impairment in the healthy elderly," the researchers conclude.

More information: Myung-Hoon Han et al, Relationship between telomere shortening and early subjective depressive symptoms and cognitive complaints in older adults, *Aging* (2023). DOI: [10.18632/aging.204533](https://doi.org/10.18632/aging.204533)

Provided by Impact Journals LLC

Citation: Telomere shortening linked to depression and cognitive impairment in older adults (2023, February 28) retrieved 4 May 2024 from <https://medicalxpress.com/news/2023-02-telomere-shortening-linked-depression-cognitive.html>

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