

Partial sleep deprivation linked to biological aging in older adults

10 June 2015

A new study suggests that one night of partial sleep deprivation promotes biological aging in older adults.

Results show that one night of partial sleep deprivation activates [gene expression patterns](#) in peripheral blood mononuclear cells (PBMCs) consistent with increasing accumulation of damage that initiates cell cycle arrest and increases susceptibility to senescence. These findings causally link sleep deprivation to the etiology of biological aging, and further supports the hypothesis that sleep deprivation may be associated with elevated disease risk because it promotes molecular processes involved in biological aging.

"Our data support the hypothesis that one night of not getting enough sleep in [older adults](#) activates important biological pathways that promote biological aging," said lead author Judith Carroll, PhD, assistant professor of psychiatry and biobehavioral science at the UCLA Cousins Center for Psychoneuroimmunology in Los Angeles, Calif.

The research abstract was published recently in an online supplement of the journal *Sleep* and will be presented Wednesday, June 10, in Seattle, Washington, at SLEEP 2015, the 29th annual meeting of the Associated Professional Sleep Societies LLC.

The study group comprised 29 community-dwelling older adults. They were age 61-86 years and 48 percent were male. Participants underwent an experimental partial sleep deprivation protocol over four nights, including adaptation, an uninterrupted night of sleep, partial [sleep deprivation](#) (restricted 3 a.m. - 7 a.m.) and another uninterrupted night of [sleep](#) (recovery). Blood samples were obtained each morning to assess PBMC gene expression using Illumina HT-12 arrays.

More information: Abstract Title: Partial Sleep

Deprivation Induces DNA Damage and Senescence in Older Adults

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