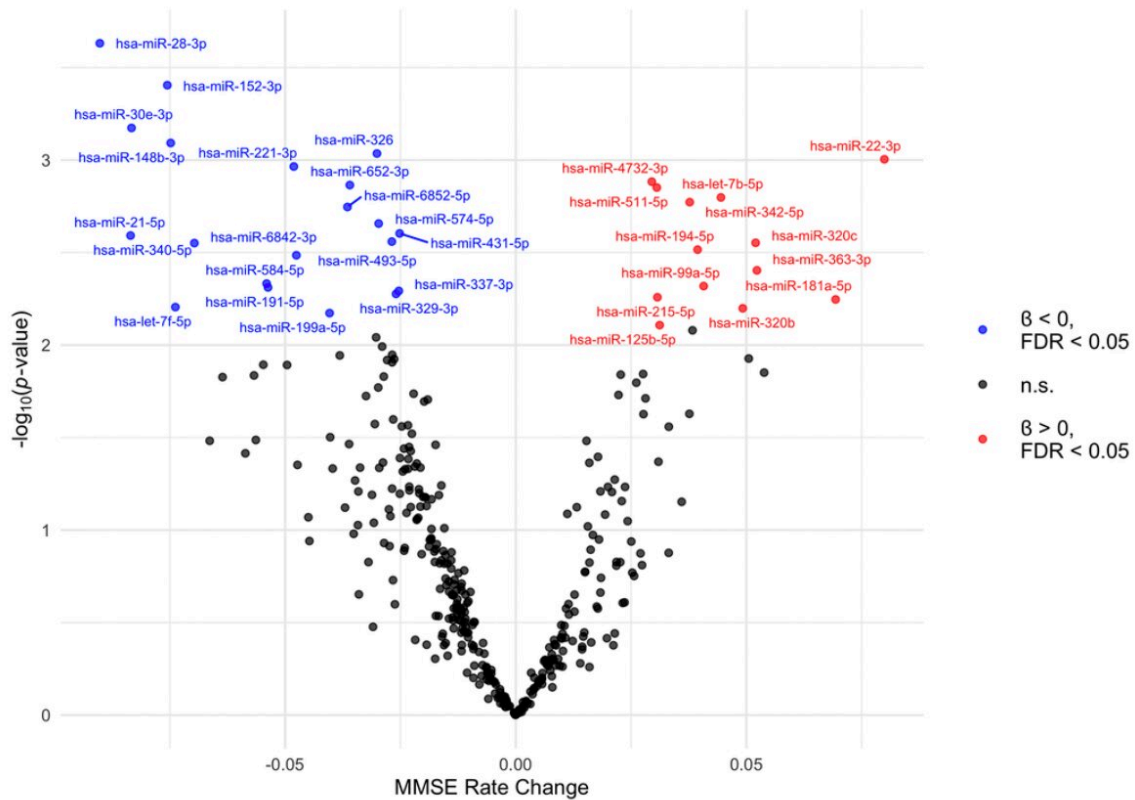


Extracellular microRNA and cognitive function in a prospective cohort of older men

September 16 2022



Volcano plot of plasma miRNAs associated with trajectory of MMSE scores. Credit: *Aging* (2022). DOI: 10.18632/aging.204268

Aging-related cognitive decline is an early symptom of Alzheimer's disease and other dementias, and on its own can have substantial

consequences on an individual's ability to perform important everyday functions. Despite increasing interest in the potential roles of extracellular microRNAs (miRNAs) in central nervous system (CNS) pathologies, there has been little research on extracellular miRNAs in early stages of cognitive decline.

In a new study titled "Extracellular microRNA and cognitive function in a prospective cohort of older men: The Veterans Affairs Normative Aging Study" and published in *Aging*, researchers leveraged the longitudinal Normative Aging Study (NAS) cohort to investigate associations between plasma miRNAs and cognitive function among cognitively normal men.

"In a cohort of older men from Massachusetts, we investigated associations between plasma miRNAs and global cognition and rate of global cognitive decline measured by the MMSE," the authors write.

This study includes data from up to 530 NAS participants (median age: 71.0 years) collected from 1996 to 2013, with a total of 1,331 person-visits (equal to 2,471 years of follow up). Global cognitive function was assessed using the Mini-Mental State Examination (MMSE). Plasma miRNAs were profiled using small RNA sequencing. Associations of expression of 381 miRNAs with current cognitive function and rate of change in cognitive function were assessed using linear regression (N = 457) and linear mixed models (N = 530), respectively.

In adjusted models, levels of two plasma miRNAs were associated with higher MMSE scores (p plasma miRNAs was associated with rate of change in MMSE scores over time (p prion diseases and fatty acid biosynthesis).

"Circulating miRNAs were associated with both cross-sectional cognitive function and rate of change in cognitive function among

cognitively normal men. Further research is needed to elucidate the potential functions of these miRNAs in the CNS and investigate relationships with other neurological outcomes," the authors write.

More information: Nicole Comfort et al, Extracellular microRNA and cognitive function in a prospective cohort of older men: The Veterans Affairs Normative Aging Study, *Aging* (2022). [DOI: 10.18632/aging.204268](https://doi.org/10.18632/aging.204268)

Provided by Impact Journals LLC

Citation: Extracellular microRNA and cognitive function in a prospective cohort of older men (2022, September 16) retrieved 15 February 2023 from <https://medicalxpress.com/news/2022-09-extracellular-microrna-cognitive-function-prospective.html>

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