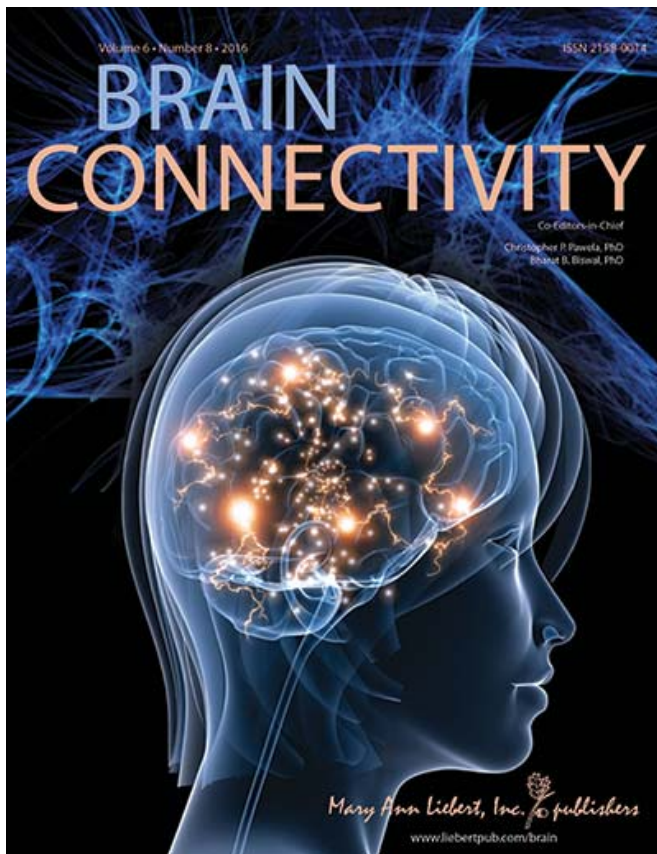


# Researchers identify group of brain structural networks linked to loss of cognitive function

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The decreased expression of some structural covariance networks (SCNs) in the brain is associated with advancing age, whereas other networks are less affected by age, and a new study now points to the independent effects of cerebral small vessel disease on SCNs. SCNs may be an important indicator of diminished cognitive functioning in older persons, according to an article published in *Brain Connectivity*.

In "Structural Covariance Networks and Their

Association with Age, Features of Cerebral Small Vessel Disease and Cognitive Functioning in Older Persons," Jessica Foster-Dingley, Jeroen van der Grond, PhD, et al. from Leiden University Medical Center and Leiden University, the Netherlands and CAPRI-University of Antwerp, Belgium, analyzed the magnetic resonance imaging (MRI) scans of study participants aged 75-96 years who had mild loss in cognitive function. The researchers assessed the volume of [white matter hyperintensities](#), microbleeds, and other vascular changes associated with small vessel disease. They compared this to the expression of SCNs, age, memory loss, and psychomotor speed.

"Scientific consensus is building that age related cognitive decline is connected to maladaptive changes in the brain's small blood vessels," says Christopher Pawela, PhD, Co-Editor-in-Chief of *Brain Connectivity* and Assistant Professor, Medical College of Wisconsin. "Leiden University researchers have performed an elegant study using [magnetic resonance imaging](#) (MRI) to demonstrate that these micro-scale blood vessel alterations are related to decreased detection of certain imaging brain networks and, furthermore, that decreased detection of these brain networks is correlated to impaired [cognitive functioning](#) using standard behavioral testing methods."

**More information:** Jessica C. Foster-Dingley et al, Structural Covariance Networks and Their Association with Age, Features of Cerebral Small-Vessel Disease, and Cognitive Functioning in Older Persons, *Brain Connectivity* (2016). [DOI: 10.1089/brain.2016.0434](https://doi.org/10.1089/brain.2016.0434)

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