

The link between dementia and cardiovascular disease

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Studies that link breakdowns in the brain's blood vessels to Alzheimer's disease and vascular dementia were presented today at Neuroscience 2018, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health. Molecules that signal damage in these systems could aid in earlier detection of these diseases and inform more effective interventions.

Alzheimer's disease and [vascular dementia](#) cause impairments of memory, cognition, and learning. Although there are important [genetic risk](#) factors for these diseases, there is also strong evidence to suggest that [vascular disorders](#) such as [high blood pressure](#) and heart disease play a major role. The research presented today reveals new mechanisms for how damage to the brain's vascular system contributes to neurodegeneration and point towards potentially protective or therapeutic interventions, such as exercise.

Today's new findings show that:

- Molecules called biomarkers, which signal brain vascular injury, could help identify [dementia](#) in its early stages and allow intervention and eventually treatment to improve patient outcomes (Berislav Zlokovic, abstract 469.10).
- Cardiovascular exercise seems to improve blood flow to white matter and protects against vascular impairment in a mouse model of dementia (Lianne Trigiani, abstract 467.15).
- A molecule that is depleted in vascular dementia patients could

be used for early detection or for treatment of patients with this [cognitive decline](#) (Deron Herr, abstract 469.27).

- Age-related loss of function in the brain's lymphatic system plays a role in neurodegeneration and improving it could help delay or prevent Alzheimer's disease (Jonathan Kipnis, abstract 267.02).
- The blood brain barriers' effectiveness is reduced in mice engineered with the strongest genetic risk factor for Alzheimer's, leading to neuronal loss and cognitive decline (Berislav Zlokovic, abstract 540.04).

"The research presented today represents a growing understanding of two complex and related disorders," said moderator Richard Wainford, Ph.D., of Boston University School of Medicine. "Knowledge of the neurobiology and mechanisms involved open the door to being able to identify dementia early, which offers hope of potential new treatments and interventions that could help patients and their families around the world."

More information: Related Neuroscience 2018 Presentation Featured Lecture: Neural Sequences in Memory and Cognition Monday, Nov. 5, 3:15-4:25 p.m., SDCC Ballroom 20

Provided by Society for Neuroscience

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