

Compounded outcomes associated with comorbid Alzheimer's disease, cerebrovascular disease

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Researchers from the Sanders-Brown Center on Aging at the University of Kentucky have been able to confirm anecdotal information on patients with both Alzheimer's disease (AD) and cerebrovascular disease (CVD) using mouse models in two different studies.

The findings of these two studies, which were recently published in *Acta Neuropathologica* and *Alzheimer's Research & Therapy*, have potentially significant implications for patients with both disorders.

Both papers studied CVD in Alzheimer's disease mouse models using different lifestyle factors.

Paul Murphy, Ph.D, and his group studied the combined effects of type 2 diabetes, Alzheimer's disease, and [cerebrovascular disease](#) in a novel mouse genetic model.

Donna Wilcock, Ph.D, and her group used a different [mouse model](#) to study the effects of Alzheimer's disease and hyperhomocysteinemia on cognition. An elevated level of homocysteine is associated with a number of disease states, including CVD.

According to Wilcock, both papers came to similar conclusions.

"We found that, while the primary Alzheimer's pathologies were

unchanged, the learning and memory outcomes were significantly worse. In other words, in our mouse models, the cognitive effects of Alzheimer's disease combined with cerebrovascular disease were compounded both in terms of severity and the speed of decline," Wilcock says.

Murphy emphasizes the significance of the findings, particularly since approximately 40% of Alzheimer's patients also have cerebrovascular disease.

"We are really excited about these results," Murphy said. "Until now, we have had almost no way to study how Alzheimer's and cerebrovascular disease interact. These new mouse models give us a way to test ideas about the disease, and ultimately develop ways to treat it."

Provided by University of Kentucky

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