

# New evidence links Alzheimer's disease and diabetes

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An emerging body of research suggests that Alzheimer's disease may be linked to insulin resistance, constituting a third type of diabetes. This model is based on several observations including an increased risk of developing Alzheimer's disease for diabetic patients, and reduced insulin levels in the brain tissue of Alzheimer's disease patients.

Though intriguing, the existing evidence does not reveal if defective insulin signaling is causative of Alzheimer's or how insulin resistance impacts cognitive function. Two back-to-back research articles in the [Journal of Clinical Investigation](#) - led by Konrad Talbot, Steve Arnold and colleagues at the University of Pennsylvania and by Fernanda De Felice, Sergio Ferreria and colleagues at the University of Rio de Janeiro - address the connection between insulin resistance and Alzheimer's disease.

The University of Pennsylvania team examined insulin signaling in human brain tissue postmortem, and concluded that the activation state of many insulin signaling molecules were highly related to memory and cognitive function. They further suggest that insulin resistance is a common and early feature of Alzheimer's disease.

The De Felice group further observed impaired insulin signaling in Alzheimer's [brain tissue](#) in rodent and non-human primate model systems as well as from tissue from human patients. They went on to show in a mouse model system of Alzheimer's disease that treatment with a new anti-diabetic drug normalized insulin signaling and remarkably improved cognitive function.

Cumulatively, these two new studies strongly support a connection between [insulin resistance](#) and Alzheimer's disease and provide hope for new therapeutics in Alzheimer's disease treatment.

**More information:** An anti-diabetes agent

protects the mouse brain from defective insulin signaling caused by Alzheimer's disease - associated A $\beta$  oligomers -

[www.jci.org/articles/view/5725 ...  
de0efc001f2106f5edc4](http://www.jci.org/articles/view/5725...de0efc001f2106f5edc4)

Demonstrated brain insulin resistance in Alzheimer's disease patients is associated with IGF-1 resistance, IRS-1 dysregulation, and cognitive decline - [www.jci.org/articles/view/5990 ...  
f9a078d273792af09d60](http://www.jci.org/articles/view/5990...f9a078d273792af09d60)

Provided by Journal of Clinical Investigation

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