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ALZHEIMER DISEASE

Insulin resistance could be linked to risk of AD via reduced glucose uptake

Midlife insulin resistance might be a modifiable risk factor for Alzheimer disease (AD), according to new research. Previous studies have linked insulin resistance and diabetes to an increased risk of AD, but the mechanism behind the association is not fully understood.

In a study led by Barbara Bendlin, 150 cognitively normal, late middle-aged adults from the Wisconsin Registry for Alzheimer's Prevention (WRAP) study underwent neuropsychological testing, ^{18}F-fluorodeoxyglucose PET (^{18}F-FDG-PET, a measure of cerebral glucose metabolism), and assessment of insulin resistance.

The researchers identified a link between increased insulin resistance and decreased glucose metabolism in several brain areas. The association was particularly robust in the left medial temporal lobe, and reduced glucose metabolism in this area was also related to worse memory performance.

According to Bendlin, the weaker ^{18}F-FDG-PET signal observed in individuals with insulin resistance could reflect altered glucose transport in the brain; alternatively, it might indicate neuronal injury.

"Although the results are intriguing, at this point we do not know whether the findings point toward an AD-specific process," notes Bendlin. The WRAP participants are being followed to confirm the longitudinal correlation between insulin resistance and AD. The investigators are also studying the effects of insulin resistance on amyloid, tau, and vascular measures in the brain.

Hemi Malkki

Original article Willette, A. A. *et al.* Association of insulin resistance with cerebral glucose uptake in late middle-aged adults at risk for Alzheimer disease. *JAMA Neurol.* doi:10.1001/jamaneurol.2015.0613