

# Study evaluates intranasal insulin therapy for adults with mild cognitive impairment or Alzheimer's

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Intranasal insulin therapy appears to provide some benefit for cognitive function in patients with amnesic mild cognitive impairment and Alzheimer disease, according to a report published Online First today by *Archives of Neurology*.

According to background information in the article, insulin plays a role in a number of functions of the central nervous system. "The importance of insulin in normal brain function is underscored by evidence that insulin dysregulation contributes to the pathophysiology of Alzheimer disease (AD), a disorder characterized in its earliest stages by synaptic loss and memory impairment," the authors write. "[Insulin levels](#) and insulin activity in the central nervous system are reduced in AD."

Suzanne Craft, Ph.D., of the Veterans Affairs Puget Sound Health Care System and the University of Washington School of Medicine, Seattle, and colleagues conducted a [randomized controlled trial](#) to evaluate the effects of intranasal insulin therapy on cognition, function, cerebral [glucose metabolism](#) and cerebrospinal fluid biomarkers in adults with amnesic [mild cognitive impairment](#) (aMCI) or AD.

Study participants were randomized into one of three treatment groups, with 36 participants receiving 20 IU (international unit) of insulin daily, 38 receiving 40 IU of insulin daily, and 30 participants receiving placebo daily for four months. All treatments were administered using a nasal

drug delivery device. The authors evaluated the effects of treatment on delayed story recall (how well participants could recall a story told to them immediately after, and after a short time lapse) and the Dementia Severity Rating Scale (DSRS) scores of participants.

Compared with participants in the placebo-controlled group, those receiving 20 IU of insulin daily showed improved delayed story recall, however no improvement was observed for participants receiving 40 IU of insulin. Also, compared with the [placebo group](#), DSRS scores were preserved for both [insulin treatment](#) groups. Both insulin doses also appeared to preserve general cognition for younger participants as assessed by the Alzheimer Disease's Assessment Scale–cognitive subscale (ADAS-cog) score as well as functional abilities in adults with AD as assessed by scores on the Alzheimer's Disease Cooperative Study–activities of daily living (ADCS-ADL) scale. Conversely, participants with aMCI showed no change regardless of treatment assignment and participants in the placebo-controlled group showed a slight decline overall in function.

"In conclusion, the results of our pilot trial demonstrate that the administration of intranasal insulin stabilized or improved cognition, function and cerebral glucose metabolism for adults with aMCI or AD," the authors write. "Taken together, these results provide an impetus for future clinical trials of intranasal [insulin therapy](#) and for further mechanistic studies of insulin's role in the pathogenesis of AD."

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