

# Hearing loss and high blood sugar linked to poorer learning and memory among older Latinos

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Hearing loss and diabetes are major public health problems, with Latinos at higher risk than other demographic groups. In a new study published

December 17, 2020 in the online issue of *JAMA Otolaryngology-Head & Neck Surgery*, researchers at University of California San Diego School of Medicine with colleagues elsewhere, report that hearing loss and high blood sugar are associated with poor cognitive performance among middle-aged and older Latinos.

Diabetes is a risk factor for Alzheimer's disease (AD) and related dementias. More recently, hearing loss has also been linked to increased risk for AD. However, few studies have investigated the combined relationships between cardiovascular disease risk, hearing loss and cognition.

As part of the Hispanic Community Health Study/Study of Latinos, more than 9,000 middle age and older Latinos (ages 45 to 74 years) underwent hearing examinations, extensive cardiovascular and diabetes testing and cognitive assessments. Participants include Central Americans, Cubans, Dominicans, Mexicans, Puerto Ricans and South Americans residing in the Bronx, NY; Chicago, IL; Miami, FL and San Diego, CA.

Those who displayed hearing loss also included individuals with mild to severe levels of cognitive impairment.

"Initially, we thought that the relationships between hearing loss and cognition would be overshadowed by high cardiovascular disease risk, but this was not the case," said first author Ariana M. Stickel, Ph.D., a postdoctoral scholar in the Department of Neurosciences at UC San Diego School of Medicine.

"This opens up promising avenues for interventions to reduce Alzheimer's disease risk. Evidence suggests that hearing aid use may be protective against cognitive declines for individuals with hearing loss, yet we also see that fewer than 5 percent of Latinos with hearing loss report

using hearing aids. This is something we can change to help prevent cognitive declines, but it is going to take awareness on the part of health care providers and their patients."

The study also found that high [cardiovascular disease risk](#) is associated with poorer cognition.

"We were surprised to find that individuals with high blood sugar and otherwise average cardiovascular health are susceptible to poorer learning and memory, but only if they also had hearing loss," said senior author Hector M. González, Ph.D., professor in the Department of Neurosciences at UC San Diego School of Medicine and a member of the UC San Diego Shiley-Marcos Alzheimer's Disease Research Center.

Impairments in learning and memory occur in the preclinical stages of AD. González said the next step is to investigate what is happening within the brain.

"Is there a particular region or network in the brain that is susceptible to damage from both hearing loss and high blood sugar? Does this overlap with early brain changes due to Alzheimer's disease, and how might it be related to learning and memory," González said.

According to a new report by the Lancet Commission, there would be an 8 percent reduction in dementia prevalence globally if [hearing](#) loss alone is eliminated.

"Both [hearing loss](#) and diabetes can be modified," said Stickel. "Latinos are projected to have the highest increase in Alzheimer's [disease](#) and related dementia cases in the U.S. by 2060. Connecting our findings to public health solutions that work for Latinos can help mitigate the impending public health crisis."

**More information:** Ariana M. Stickel et al. Hearing Sensitivity, Cardiovascular Risk, and Neurocognitive Function: The Hispanic Community Health Study/Study of Latinos (HCHS/SOL) *JAMA Otolaryngol Head Neck Surg.* Published online December 17, 2020. [DOI: 10.1001/jamaoto.2020.4835](https://doi.org/10.1001/jamaoto.2020.4835)

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