# Hearing and vision impairment linked to serious cognitive impairment in older adults

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A new nationally representative study published online in the *Journal of Alzheimer's Disease Reports* found hearing impairment and vision impairment to be independently associated with cognitive impairment.

After considering sex, age and other socio-demographic characteristics, older adults with hearing impairment had more than double the odds of cognitive impairment, while those with vision impairment had more than triple the odds of cognitive impairment. When an older adult experienced both hearing impairment and vision impairment, the odds of cognitive impairment were eight-fold. Approximately one half of adults aged 65 and older with both hearing and vision impairment also had cognitive impairment.

There have been several studies in the past decade linking hearing loss to dementia and cognitive decline, but less attention has been paid to vision loss and dual sensory impairment.

"Given that half of adults with both vision and hearing loss experience serious cognitive problems, sensory loss could be used to help identify those at risk for cognitive decline and dementia," says lead author Esme Fuller-Thomson, director of the University of Toronto's Institute for Life Course & Aging and professor at the Factor-Inwentash Faculty of Social Work (FIFSW) and Department of Family & Community Medicine.

The study was based on 10 consecutive waves of the American Community Survey (2008-2017), a nationally representative annual survey of approximately half a million American respondents aged 65 and older. A total of 5.4 million older Americans were included in the study, including both institutionalized and community dwelling older adults

"Dual sensory impairment prevents an individual from compensating for the loss of one sense through the use of another," said co-author Aliya Nowczynski, a recent Masters of Social Work (MSW) graduate from the University of Toronto "Our findings emphasize the need to reach out to older adults with dual sensory impairment, to assess whether there are

opportunities for early intervention."

The authors emphasize the importance of considering treatment options for sensory impairment to support the cognitive health of older adults.

"It is important that we consider the accessibility of common treatments for sensory impairment, such as hearing aids and cataract surgery" says co-author Andie MacNeil, a recent University of Toronto MSW graduate. "It is possible that those who have difficulty accessing these treatment options will be more vulnerable to cognitive impairment. More research is needed to determine whether interventions for sensory impairment decrease the risk of subsequent cognitive decline.

Several possible theories that may explain the association between sensory impairment and cognitive impairment include cognitive deterioration due to decreased auditory and visual input, social disengagement and loneliness due to problems communicating, and age-related degeneration of the central nervous system.

"Future research is still needed to determine if the association between sensory impairment and cognitive decline is causal," says Fuller-Thomson, "Determining the mechanisms that underlie this relationship can help guide the next steps in supporting older adults."

**More information:** Esme Fuller-Thomson et al, The Association Between Hearing Impairment, Vision Impairment, Dual Sensory Impairment, and Serious Cognitive Impairment: Findings from a Population-Based Study of 5.4 million Older Adults, *Journal of Alzheimer's Disease Reports* (2022). DOI: 10.3233/ADR-220005

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