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Seniors with hearing loss are significantly more likely to develop dementia over time than those who retain their hearing, a study by Johns Hopkins and National Institute on Aging researchers suggests. The findings, the researchers say, could lead to new ways to combat dementia, a condition that affects millions of people worldwide and carries heavy societal burdens.

Although the reason for the link between the two conditions is unknown, the investigators suggest that a common pathology may underlie both or that the strain of decoding sounds over the years may overwhelm the brains of people with hearing loss, leaving them more vulnerable to dementia. They also speculate that hearing loss could lead to dementia by making individuals more socially isolated, a known risk factor for dementia and other cognitive disorders.

Whatever the cause, the scientists report, their finding may offer a starting point for interventions — even as simple as hearing aids — that could delay or prevent dementia by improving patients' hearing.

"Researchers have looked at what affects hearing loss, but few have looked at how hearing loss affects cognitive brain function," says study leader Frank Lin, M.D., Ph.D., assistant professor in the Division of Otology at Johns Hopkins University School of Medicine. "There hasn't been much crosstalk between otologists and geriatricians, so it's been unclear whether hearing loss and dementia are related."

To make the connection, Lin and his colleagues used data from the Baltimore Longitudinal Study on Aging (BLSA). The BLSA, initiated by the National Institute on Aging in 1958, has tracked various health factors in thousands of men and women over decades.

The new study, published in the February Archives of Neurology, focused on 639 people whose hearing and cognitive abilities were tested as part of the BLSA between 1990 and 1994. While about a quarter of the volunteers had some hearing loss at the start of the study, none had dementia.

These volunteers were then closely followed with repeat examinations every one to two years, and by 2008, 58 of them had developed dementia. The researchers found that study participants with hearing loss at the beginning of the study were significantly more likely to develop dementia by the end. Compared with volunteers with normal hearing, those with mild, moderate, and severe hearing loss had twofold, threefold, and fivefold, respectively, the risk of developing dementia over time. The more hearing loss they had, the higher their likelihood of developing the memory-robbing disease.

Even after the researchers took into account other factors that are associated with risk of dementia, including diabetes, high blood pressure, age, sex and race, Lin explains, hearing loss and dementia were still strongly connected.

"A lot of people ignore hearing loss because it's such a slow and insidious process as we age," Lin says. "Even if people feel as if they are not affected, we're showing that it may well be a more serious problem."

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