

# Having trouble hearing? Maybe it's not your ears

November 30 2016, by Alan Mozes, Healthday Reporter

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(HealthDay)—Seniors who struggle to make out what people are saying

around the dinner table or on a noisy street may have perfectly "normal" hearing. The problem could actually be in the brain, a new study suggests.

Trouble processing conversations in a loud setting may indicate that the brain's ability to quickly and easily process speech is diminished.

The findings demonstrate that "separately from any typical [hearing loss](#) that might occur as we age, our brains also get worse at processing the sound of talking when there are other sounds at the same time," said study co-author Jonathan Simon. He's an associate professor at the University of Maryland's Institute for Systems Research.

"The [background noise](#) may not even be considered especially loud by younger listeners," he noted.

But "the implication is that typical older adults need to exert more effort, and take more time, in order to understand what someone is saying to them when there's also noise, even only moderate noise, around them," Simon explained.

About one in three Americans aged 65 to 74 has some degree of hearing loss, according to the U.S. National Institute on Deafness and Other Communication Disorders. For those 75 or older, half have difficulty hearing.

The new study included 17 young adults (aged 18 to 27) and 15 [older adults](#) (aged 61 to 73). All had normal hearing and were dementia-free.

All had a series of [hearing tests](#), some of which included background noise. All also underwent brain scans focused on two regions of the brain: the midbrain, which controls basic sound processing; and the cortex, which is critical to speech comprehension.

Younger adults performed significantly better than seniors in both quiet and noisy settings. But the researchers found that noisy settings were more challenging for seniors.

The scans suggested why.

Midbrain scans revealed that neurological signaling related to hearing was weaker among the older study participants. And cortex scans suggested that auditory information took longer to process among seniors than young adults.

Why? The study authors theorized that the problem could trace back to normal age-related nerve impairment that undermines signaling and communication between nerve cells in the brain.

Regardless, the bottom line was clear: seniors often have to expend more effort to hear, and often end up with worse results.

"Typical seniors who have difficulty understanding what someone is saying in a noisy room will have both kinds of degradation," said Simon, referring to loss of actual hearing function as well as brain-processing problems.

And that means that while hearing aids "may be an important part of any solution to general problems with hearing," they don't solve the whole problem, Simon said.

The solution, he added, could be a kind of physical therapy for hearing and speech recognition.

"There is—in theory, not yet in practice—a real possibility of restoring enough of the youthful aspects of the brain to help with this problem," Simon said.

Robert Frisina directs the University of South Florida's Global Center for Hearing and Speech Research, in Tampa. Though he was not involved with the new research, he called "the Maryland study a good advance in this area."

"Now, it is pretty well accepted that neurodegenerative changes in the parts of the brain used for hearing play a significant role in age-linked hearing loss and speech perception problems, particularly in background noise," he said.

"As the aging brain is understood more and more at molecular levels, these molecular changes become the prospective targets for drug or medication interventions," Frisina added.

Future interventions may ultimately involve a combination of both [hearing](#) therapy and cutting-edge medicine, Frisina said.

The study was published recently in the *Journal of Neurophysiology*.

**More information:** There's more on age-related hearing loss at the [U.S. National Institute on Deafness and Other Communication Disorders](#)

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