

Well - Tara Parker-Pope on Health

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Straining to Hear and Fend Off Dementia

By **KATHERINE BOUTON**

At a party the other night, a fund-raiser for a literary magazine, I found myself in conversation with a well-known author whose work I greatly admire. I use the term "conversation" loosely. I couldn't hear a word he said. But worse, the effort I was making to hear was using up so much brain power that I completely forgot the titles of his books.

A senior moment? Maybe. (I'm 65.) But for me, it's complicated by the fact that I have severe hearing loss, only somewhat eased by a hearing aid and cochlear implant.

Dr. Frank Lin, an otolaryngologist and epidemiologist at Johns Hopkins School of Medicine, describes this phenomenon as "cognitive load." Cognitive *overload* is the way it feels. Essentially, the brain is so preoccupied with translating the sounds into words that it seems to have no processing power left to search through the storerooms of memory for a response.

Over the past few years, Dr. Lin has delivered unwelcome news to those of us with hearing loss. His work looks "at the interface of hearing loss, gerontology and public health," as he writes on [his Web site](#). The most significant issue is the relation between hearing loss and dementia.

In [a 2011 paper](#) in The Archives of Neurology, Dr. Lin and colleagues found a strong association between the two. The researchers looked at 639 subjects, ranging in age at the beginning of the study from 36 to 90 (with the majority between 60 and 80). The subjects were part of the [Baltimore Longitudinal Study of Aging](#). None had cognitive impairment at the beginning of the study, which followed subjects for 18 years; some had hearing loss.

"Compared to individuals with normal hearing, those individuals with a mild, moderate, and severe hearing loss, respectively, had a 2-, 3- and 5-fold increased risk of developing dementia over the course of the study," Dr. Lin wrote in an e-mail summarizing the results. The worse the hearing loss, the greater the risk of developing dementia. The correlation remained true even when age, diabetes and hypertension - other conditions associated with dementia - were ruled out.

In an interview, Dr. Lin discussed some possible explanations for the association. The first is social isolation, which may come with hearing loss, a known risk factor for dementia. Another possibility is cognitive load, and a third is some pathological process that causes both hearing loss and dementia.

In [a study last month](#), Dr. Lin and colleagues looked at 1,984 older adults beginning in 1997-8, again using a well-established database. Their findings reinforced those of the 2011 study, but also found that those with hearing loss had a "30 to 40 percent faster rate of loss of thinking and memory abilities" over a six-year period compared with people with normal hearing. Again, the worse the hearing loss, the worse the rate of cognitive decline.

Both studies also found, somewhat surprisingly, that hearing aids were "not significantly associated with lower risk" for cognitive impairment. But self-reporting of hearing-aid use is unreliable, and Dr. Lin's next study will focus specifically on the way hearing aids are used: for how long, how frequently, how well they have been fitted, what kind of counseling the user received, what other technologies they used to supplement hearing-aid use.

What about the notion of a common pathological process? In a [recent paper](#) in the journal *Neurology*, John Gallacher and colleagues at Cardiff University suggested the possibility of a genetic or environmental factor that could be causing both hearing loss and dementia - and perhaps not in that order. In a phenomenon called reverse causation, a degenerative pathology that leads to early dementia might prove to be a cause of hearing loss.

The work of John T. Cacioppo, director of the Social Neuroscience Laboratory at the University of Chicago, also offers a clue to a pathological link. His multidisciplinary studies on isolation have shown that perceived isolation, or loneliness, is "a more important predictor of a variety of adverse health outcomes than is objective social isolation." Those with hearing loss, who may sit through a dinner party and not hear a word, frequently experience perceived isolation.

Other research, including the [Framingham Heart Study](#), has found an association between hearing loss and another unexpected condition: cardiovascular disease. Again, the evidence suggests a common pathological cause. [Dr. David R. Friedland](#), a professor of otolaryngology at the Medical College of Wisconsin in Madison, hypothesized in a 2009 paper delivered at a conference that low-frequency loss could be an early indication that a patient has vascular problems: the inner ear is "so sensitive to blood flow" that any vascular abnormalities "could be noted earlier here than in other parts of the body."

A common pathological cause might help explain why hearing aids do not seem to reduce the risk of dementia. But those of us with hearing loss hope that is not the case; common sense suggests that if you don't have to work so hard to hear, you have greater cognitive power to listen and understand - and remember. And the sense of perceived isolation, another risk for dementia, is reduced.

A critical factor may be the way hearing aids are used. A user must practice to maximize their effectiveness and they may need reprogramming by an audiologist. Additional assistive technologies like [looping](#) and [FM systems](#) may also be required. And people with progressive hearing loss may need new aids every few years.

Increasingly, people buy hearing aids online or from big-box stores like Costco, making it hard for the user to follow up. In the first year I had hearing aids, I saw my audiologist initially every two weeks for reprocessing and then every three months.

In one study, Dr. Lin and his colleague Wade Chien [found](#) that only one in seven adults who could benefit from hearing aids used them. One deterrent is cost ([\\$2,000 to \\$6,000 per ear](#)), seldom covered by insurance. Another is the stigma of old age.

Hearing loss is a natural part of aging. But for most people with hearing loss, according to the [National Institute on Deafness and Other Communication Disorders](#), the condition begins long

before they get old. Almost two-thirds of men with hearing loss began to lose their hearing before age 44. My hearing loss began when I was 30.

Forty-eight million Americans suffer from some degree of hearing loss. If it can be proved in a clinical trial that hearing aids help delay or offset dementia, the benefits would be immeasurable.

"Could we do something to reduce cognitive decline and delay the onset of dementia?" he asked. "It's hugely important, because by 2050, 1 in 30 Americans will have dementia.

"If we could delay the onset by even one year, the prevalence of dementia drops by 15 percent down the road. You're talking about billions of dollars in health care savings."

Should studies establish definitively that correcting hearing loss decreases the potential for early-onset dementia, we might finally overcome the stigma of hearing loss. Get your hearing tested, get it corrected, and enjoy a longer cognitively active life. Establishing the dangers of uncorrected hearing might even convince private insurers and Medicare that covering the cost of hearing aids is a small price to pay to offset the cost of dementia.

Katherine Bouton is the author of the new book, "Shouting Won't Help: Why I - and 50 Million Other Americans - Can't Hear You," from which this is adapted.