

Preventing dementia through correcting hearing: huge progress but more to do



Worldwide hearing loss is a major modifiable risk factor for dementia, with the largest effect in the population.¹ A systematic review published in February, 2023, included 25 observational studies and six trials on the association of correcting hearing loss with hearing aids or cochlear implants and cognitive decline or dementia.² The review included a meta-analysis of eight cohort studies with 126 903 participants and a follow-up of 2–25 years, and found that people with hearing loss who used hearing aids had an 19% lower risk of cognitive decline and a 17% lower risk of dementia, compared with those with uncorrected hearing loss. Short-term trials showed slight cognitive improvement in those who received hearing aids. However, the authors found no long-term trials of the effects of cochlear implants on the risk of subsequent dementia.

In *The Lancet Public Health*, Fan Jiang and colleagues³ report an analysis of longitudinal data from 437 704 individuals from the UK Biobank (235 249 (53.7%) were female, 202 455 (46.3%) were male, and 416 131 (95.1%) were White, with a mean age at baseline of 56.0 years [SD 8.0]). The analysis found a 42% increased risk of dementia in people with self-reported hearing loss compared with those without (hazard ratio 1.42 [95% CI 1.28–1.57]). However, the authors found no increased risk in those who used hearing aids.

The findings from Jiang and colleagues reinforce the possibility that untreated but not treated hearing loss confers increased risk of dementia. An analogous case exists for hypertension, with consistent evidence that anti-hypertensive medication can mitigate dementia risk.^{4,5} However, unlike for hypertension, no randomised controlled trials of hearing aids and dementia risk have been done.

Observational findings might be confounded, as those who use hearing aids might have better access to financial, social, or cognitive resources to look after their health compared with those with hearing loss without hearing aids. Jiang and colleagues add extensive sensitivity and interaction analysis. Their findings did not change when restricted to those who developed dementia 10 years or more after baseline, indicating

that reverse causation is an unlikely explanation of their findings. The authors also did a competing risk analysis, which showed that findings were not explained by earlier death of those using hearing aids compared with those without hearing aids. Additionally, interaction analysis indicated that cardiovascular disease has no bigger role in dementia in those with hearing loss than in those without and is therefore unlikely to confound the findings by causing both hearing loss and dementia. In line with this finding, the authors found that hearing aid use protected from all-cause dementia and dementia subtypes. This finding suggests that hearing aids might work by supporting brain resilience rather than by reducing specific forms of neuropathology.

Hearing loss was self-reported in this study, so its effects were probably underestimated because many people do not realise that they have hearing loss. All participants in the study were UK Biobank volunteers who, on average, have better health and are more likely to be from higher socioeconomic strata than the general population. Despite this demographic sample, and hearing aids being free of charge in the UK National Health Service, most people with hearing loss did not use hearing aids in this study (98 730 [88%] of 111 822 participants).

Hearing loss is often under-recognised and under-treated. Hearing aid use requires awareness of hearing loss and access to the technology, but also perseverance, manual dexterity, and maintenance, and hearing aid use can be stigmatising and considered unappealing.

With the addition of Jiang and colleagues' work,³ the evidence that hearing aids can be a powerful tool to reduce the risk of dementia in people with hearing loss is as good as possible without randomised controlled trials, which might not be practically possible or ethical because people with hearing loss should not be stopped from using effective treatments. Dementia is not only an illness that affects the individual and their family, but it can also be expensive. However, using hearing aids to prevent dementia has been found to be cost-effective and cost saving.⁶ In the USA, hearing aids have become available to purchase over the counter, thus making them more accessible.⁷

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The evidence is compelling that treating hearing loss is a promising way of reducing dementia risk. This is the time to increase awareness of and detection of hearing loss, as well as the acceptability and usability of hearing aids.

We declare no competing interests.

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