

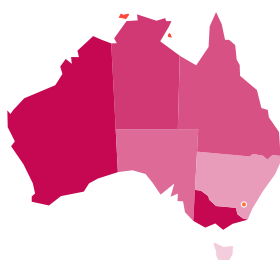


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Hearing loss, cerebro and cardiovascular disorders.

Information for your patients.

As a physician, you probably ask your patients if they have had their hearing checked recently. Patients may also seek you out for information about getting their hearing checked. Outside of referring them to get a test or scan it is important to let them know of the potential health risks of ignoring their hearing loss. Some of those risks can include life-threatening cardiovascular disorders.



Cardiovascular diseases in Australia

According to the AIHW, an estimated 1.2 million Australians aged 18 and over (6.2% of the adult population) had one or more conditions related to heart, stroke or vascular disease, based on self-reported data from the ABS 2017–18 National Health Survey. Cardiovascular diseases are also a leading cause of death amongst older Australians, with more than half of cardiovascular deaths occurring in persons over 85 years of age¹.

The link between hearing loss and Cardiovascular disorders

There are several studies that have found a connection between hearing loss and cardiovascular disorders. A 2018 study by Kapil Wattamwar, MD showed that cardiovascular disease was primarily associated with accelerated hearing loss and worsened low-frequency hearing.

This backs up a two-part Framingham study that hypothesised low-frequency hearing loss was associated with cardiovascular disease. Cardiovascular status was determined for 1,168 patients of the audiology department. Associations between their audiogram patterns and cardiovascular variables were tested and controlled for age and gender. Logistic regression models were used to calculate cardiovascular risk factors from audiogram pattern. The models were applied to a separate group of 90 subjects recruited from cardiology and geriatric medicine clinics, who were also given audiograms.

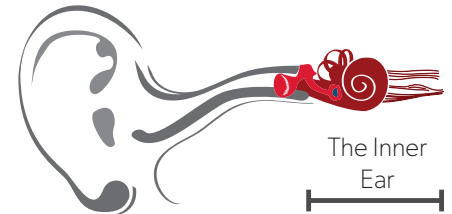
The study results indicated a significant association between low-frequency hearing loss and cardiovascular disease risk factors. When controlling for age, hypertension, diabetes, smoking, and hyperlipidemia, low-frequency hearing loss was significantly associated with the following cardio and cerebrovascular disorders:¹

1. Intracranial vascular pathology (stroke and transient ischemic attacks)
2. Peripheral vascular disease
3. Coronary artery disease
4. Myocardial infarction

“We conclude there is a significant relationship between cardiovascular status and audiometric pattern.”³

The connection between hearing loss and cardiovascular disorders

Poor cardiovascular health causes inadequate blood flow and blood vessel trauma to the inner ear. The inner ear is so sensitive to blood flow that disorders such as hearing loss, particularly at the lower frequencies, may be an early warning sign of cardiovascular disease.



Researchers concluded individuals with cardiovascular disorders may be more prone to hearing loss and therefore in need of hearing evaluations. They also found an association between low-frequency hearing loss and numerous cardiovascular and cerebrovascular events.

The negative influence of impaired cardiovascular health on both the peripheral and central auditory system, and the potential positive influence of improved cardiovascular health on these same systems, has been found through a sizable body of research conducted over more than six decades. The most significant positive relationship between improved cardiovascular health and improvements in those auditory systems has been found in older adults. If that relationship continues to be confirmed, then a potential new avenue for auditory rehabilitation on behalf of adults who possess impaired auditory function may be discovered.

Certain audiogram patterns have been found to correlate strongly with cerebrovascular and peripheral arterial disease. Because of this, audiograms represent a screening test for those at risk. Patients with low-frequency hearing loss should be regarded as at risk for cardio or cerebrovascular events, and appropriate referrals should be considered.

If a patient has been diagnosed with a cardio or cerebrovascular disorder, it is important to advise them to have their hearing tested regularly and to get any hearing loss treated with hearing aids early, in order to restore hearing levels and improve quality of life. Older patients should routinely be made aware of how important it is to keep their primary physicians informed of any hearing loss, especially at the lower frequencies, because it could be a harbinger of an undiagnosed cardio or cerebrovascular disorder.

¹ <https://www.aihw.gov.au/reports/heart-stroke-vascular-diseases/hsvd-facts/contents/heart-stroke-and-vascular-disease-and-subtypes/total-heart-stroke-and-vascular-disease>

² Better Hearing Institute. Heart Disease and Hearing Loss Linked press release. 2013 (<http://www.prnewswire.com/news-releases/heart-disease-and-hearing-loss-linked-so-get-your-hearing-checked-for-world-heart-day-bhi-advises-224502101.html>)

³ David R. Friedland, MD, Ph.D. http://www.enttoday.org/details/article/496955/Low-Frequency_Hearing_Loss_May_Indicate_Cardiovascular_Disease.html

⁴ The Laryngoscope. Department of Otolaryngology and Communication Sciences, Medical College of Wisconsin. Audiometric pattern as a predictor of cardiovascular status: development of a model for assessment of risk. 2009. Friedland DR, Cederberg C, Tarima S. (<http://www.ncbi.nlm.nih.gov/pubmed/19235737>)

⁵ American Journal of Audiology. The Influence of Cardiovascular Health on Peripheral and Central Auditory Function in Adults: A Research Review. Raymond Hall, Stacey Kerschen. 2010 (<http://aja.pubs.asha.org/article.aspx?articleid=1757459>)

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