

Hearing loss and diabetes.

Information for your patients.



Today, greater emphasis is being placed on hearing health.

As a physician, you probably ask patients whether they have had their hearing checked routinely. Beyond referring patients for hearing tests and encouraging treatment of hearing loss, it is important to inform them of the risks they run if they ignore hearing loss – dangers that include certain life-threatening comorbidities.

“Hearing loss is about twice as common in adults with Type 2 diabetes (which accounts for 95% of all diabetes cases in the U.S.) compared to those who do not have the disease.”¹

Hearing loss is more prevalent in people with diabetes

Physicians have another reason to recommend patients report their hearing loss. Researchers have discovered a higher rate of hearing loss in people with diabetes. Using tests that measure participants’ ability to hear at the low, mid, and high-frequencies in both ears, the results indicate a link between diabetes and hearing loss at all frequencies, with a somewhat stronger association in the high-frequency range. Mild or worse hearing of low- or mid-frequency sounds was about 21 percent in 399 adults with diabetes compared to about 9 percent in 4,741 adults without. Mild or greater hearing impairment at high frequencies was 54 percent in those with diabetes compared to 32 percent in those without.²

A more recent study reports similar findings. A large cohort study of over 253,301 young and middle-aged men and women showed that diabetes mellitus was associated with the development of bilateral hearing loss, and that diabetes mellitus patients have a moderately increased risk of future

hearing loss.³ The research team’s report concluded that screening for hearing loss would allow for early medical intervention that could improve hearing for adults with diabetes.

“Diabetics (are) 2.15 times as likely as people without the disease to have hearing loss...broken down by age, people under 60 had 2.61 times the risk while people over 60 had 1.58 times higher risk.”⁴

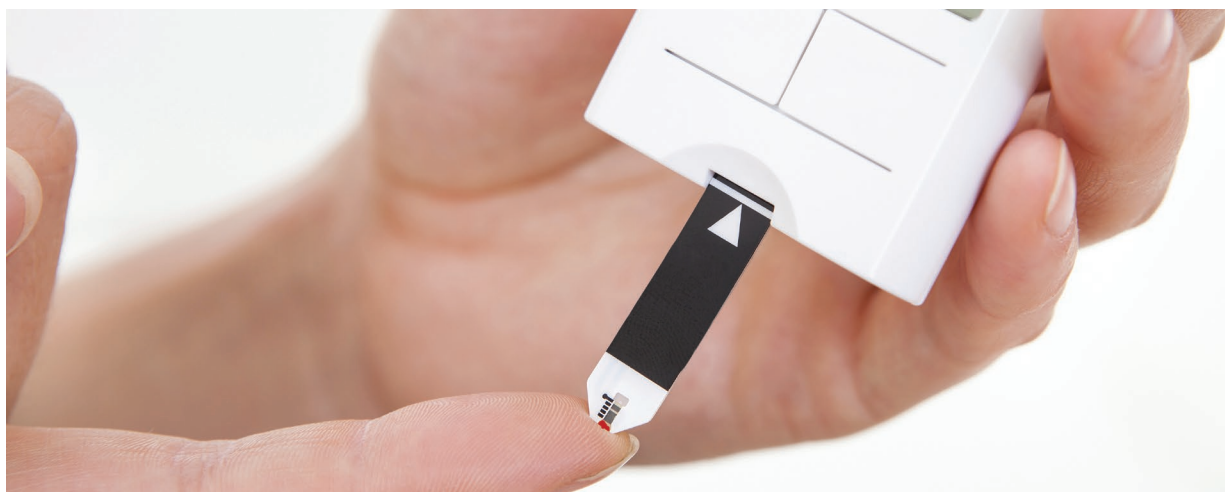
Evidence exists that diabetes may lead to sensorineural hearing loss

Post-mortem studies of diabetic patients have shown evidence diabetes may lead to sensorineural hearing loss by damaging the nerves and blood vessels of the inner ear due to the pathologic changes associated with the condition. These include:

- Sclerosis of the internal auditory artery
- Thickened capillaries of the stria vascularis
- Atrophy of the spiral ganglion
- Demyelination of the eighth cranial nerve

Hearing
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It appears the damage is more common in patients with Type 2 diabetes.

"It is possible that diabetic patients can have normal or near-normal hearing at the time of the initial identification of diabetes, only to suffer from a progressive form of sensorineural hearing loss."⁵

Physicians are encouraged to inform their patients about the evident link between hearing loss and diabetes

Inform patients who have not yet been diagnosed with diabetes that having their hearing tested is important beyond identifying the hearing loss itself - it could be an early indicator of the onset of diabetes or other cardiovascular conditions. Encourage them to report any suspected or known hearing loss for the sake of their overall health.

As for patients who have already been diagnosed with diabetes, remind them that hearing loss is a potential complication and encourage them to have their hearing tested annually. The earlier hearing loss is diagnosed, the more effective treatment options, such as hearing aids, are likely to be.

1. National Institutes of Health News. (2008). Hearing Loss is Common in People with Diabetes. (<http://www.nih.gov/news/health/jun2008/niddk-16.htm>).
2. National Institute on Deafness and Other Communication Disorders (NIDCD). (2008). *Annals of Internal Medicine*.
3. Kim, M. B., et al. (2016). Diabetes mellitus and the incidence of hearing loss: a cohort study. *Int J Epidemiol*. Nov 6. [Epub ahead of print].
4. Fox News.com. (2012). Diabetes may be linked to hearing loss, study finds. (<http://www.foxnews.com/health/2012/12/03/diabetes-may-be-linked-to-hearing-loss-study-finds/>).
5. Hendricks, J. et al. (2006). Progressive sensorineural hearing impairment in maternally inherited diabetes mellitus and deafness (MIDD). *Otology Neurotology*, 27(6), 802-808.