



Hearing Loss: Another Diabetes Complication

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As a diabetes educator, when considering diabetes complications, I think of kidney, eye, heart, and nerve damage. Hearing loss was never on my radar as a complication of diabetes, yet it disproportionately affects diabetes patients both physically and emotionally. Knowing this, I began paying closer attention to this common yet less familiar complication.

Research suggests that chronic hypoglycemia can cause hearing loss. This occurs due to auditory nerve damage. When exposed to elevated blood glucose levels over time, these nerves experience fiber loss and central auditory pathway demyelination and degeneration. Extended periods of hyperglycemia can also cause microangiopathy. This is a disease of the small blood vessels that causes the very tiny vessels in the inner ear to break and the vessels of the cochlear to thicken, making blood flow to that part of the ear very difficult.

Hearing loss is twice as common in people with diabetes as it is in those who don't have the disease, according to the National Institutes of Health. Also, of the 79 million adults thought to have predi-

abetes, the rate of hearing loss is 30% higher than in those with normal blood sugar.

So, what can we do?

Patients with diabetes should be routinely assessed for hearing loss just as they are for eye and kidney complications. Patients should be screened at initial diagnosis or initial assessment as well as every year thereafter.

You don't have to be an audiologist or have special equipment to assess a patient for hearing loss. The Hearing Handicap Inventory for the Elderly-Screening (HHIE-S) tool is a 5-minute, 10-item questionnaire that can be used with patients of all ages. It was developed to assess how an individual perceives the social and emotional effects of hearing loss. Those who perceive their hearing loss to be a problem are more likely to have further testing and accept the need for a hearing aid. The higher the HHIE-S score, the greater the handicapping effect of a hearing impairment. Providers are encouraged to develop a referral system to an audiologist so patients who are found to be at risk can get further testing and treatment if needed. Referral is recommended for individuals scoring 10 or higher on the inventory.

When working with hearing-impaired patients, it's important to remember that the longer a person has had a hearing impairment or loss, the harder it is for them to comprehend speech. Over time, if untreated, patients can actually lose the ability to process speech. In other words, even if a patient can hear clearly, they may ask you to repeat what you said. This isn't because they didn't hear you;

Table 1. Hearing Handicap Inventory for the Elderly-Screening

ITEM	YES (4 points)	SOMETIMES (2 points)	NO (0 points)
Does a hearing problem cause you to feel embarrassed when you meet new people?			
Does a hearing problem cause you to feel frustrated when talking to members of your family?			
Do you have difficulty hearing when someone speaks in a whisper?			
Do you feel handicapped by a hearing problem?			
Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?			
Does a hearing problem cause you to attend religious services less often than you would like?			
Does a hearing problem cause you to have arguments with family members?			
Does a hearing problem cause you difficulty when listening to TV or radio?			
Do you feel that any difficulty with your hearing limits or hampers your personal or social life?			
Does a hearing problem cause you difficulty when in a restaurant with relatives and friends?			
RAW SCORE _____ (sum of the points assigned each of the items)			
INTERPRETING THE RAW SCORE			
0 to 8 = 13% probability of hearing impairment (no handicap/no referral)			
10 to 24 = 50% probability of hearing impairment (mild-moderate handicap/refer)			
26 to 40 = 84% probability of hearing impairment (severe handicap/refer)			

Source: Ventry I, Weinstein B. (1983). Identification of elderly people with hearing problems. ©American Speech-Language-Hearing Association, July, 37-42. Reprinted with permission.

Note: The American Speech-Language-Hearing Association allows copies of this tool to be made and used with patients.



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http://www.dietitiancentral.com/ceu/dietitian_recorded_webinar.cfm?art_id=84&cid=39.

it's because they are having trouble processing the words you say. The key is to slow down and repeat yourself, **without raising your voice**.

Remember to add hearing impairment to your diabetes education curriculum. Know the resources in your area and have a process to refer patients to an audiologist for more extensive screenings and a fitting for hearing aids if needed. Be sure to follow up with patients who are referred to assess overall quality of life. You will be surprised at how adding this one aspect of care can benefit the lives of your patients! ■

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REFERENCES

1. Bainbridge KE, Hoffman HJ, Cowie CC. Diabetes and hearing impairment in the United States: audiometric evidence from the National Health and Nutrition Examination Surveys, 1999 to 2004. *Ann Intern Med.* 2008;149:1-10. <http://www.annals.org/content/149/1/1.abstract>
2. National Council on Aging. Hearing loss: a growing problem that affects quality of life. <http://ihcrp.georgetown.edu/agingsociety/pdfs/hearing.pdf>.