

Diabetes Educators Guide to Hearing Health

Forward

Diabetes educators are crucial for raising awareness and teaching patients with diabetes of the causes and effects of diabetes as well as proper steps to take to maintain a healthy lifestyle with diabetes. The Academy of Doctors of Audiology supports the essential work done by diabetes educators. ADA has compiled a useful assortment of educational material in this CD, with tools that can be used to teach patients about hearing loss and to be alert to changes in hearing levels with diabetes.

Too much glucose in the blood for a long time can cause diabetes problems. This high blood glucose, also called blood sugar, can damage many parts of the body, such as the heart, blood vessels, eyes, ears and kidneys. This CD contains valuable information about diabetes and hearing loss, medications that can impair hearing, screening tools to be used by diabetes educators, consequences of untreated hearing loss, as well as other relevant topics.

The January-February 2013 News You Can Use from the **Centers for Disease Control**, publicly recognized the link between hearing loss and diabetes with the following announcement:

Hearing Loss May be Linked to Diabetes

The objective of this study was to compare the prevalence of hearing impairment between diabetic and non-diabetic adults. It is thought that high blood sugar levels brought on by diabetes may lead to hearing loss by damaging blood vessels in the ears. The authors conducted a systematic literature search; cross-sectional studies were included if data on numbers of hearing-impaired and non-hearing-impaired cases with diabetes were presented. Data were obtained from 13 eligible studies (20,194 participants and 7,377 cases). Hearing impairment was higher among diabetic participants compared with nondiabetic participants. The higher prevalence of hearing impairment in diabetic patients compared with non-diabetic patients was consistent regardless of age.

Source: Horikawa C, et al. Diabetes and Risk of Hearing Impairment in Adults: A Meta-Analysis. *J Clin Endocrinol Metab*. Nov 12, 2012. <http://www.ncbi.nlm.nih.gov/pubmed/23150692>

In addition, the **American Diabetes Association** states:

“Diabetes and hearing loss are two of America's most widespread health concerns. Nearly 26 million people in the U.S. have diabetes, and an estimated 34.5 million have some type of hearing loss. The numbers are similar — is there a link?”

Yes, says the National Institutes of Health (NIH). In fact, the NIH has found that hearing loss is twice as common in people with diabetes as it is in those who don't have the disease. Also, of the 79 million adults thought to have prediabetes, the rate of hearing loss is 30% higher than in those with normal blood sugar.”

Overview of the Diabetes Educators Guide to Hearing Health

Section One- Identification of hearing problems: signs of hearing loss, screening tools, involving the family and caregivers.

The major barrier in the identification of hearing loss is the fact that it is an invisible hearing handicap that is not easily recognized in a quiet office with a one-on-one conversation between patient and doctor. Family members may report the patient seems confused, hears what he/she wants to hear, and tends to remove themselves from social activities.

Section 2- Causes of hearing loss in the diabetes population: chronic diseases, ototoxic medications, noise exposure, infection

Numerous diseases, including diabetes, cardiovascular disease, hypothyroidism, and chronic renal disease, have a secondary effect of a deterioration of hearing health. In addition to illnesses and diseases, many common medications are ototoxic. Ototoxic medications include those that are used pervasively such as loop-inhibiting diuretics, aminoglycoside antibiotics, salicylates, cancer chemotherapeutics, and quinine.

Section 3- Effects of hearing loss in daily life: communication, psychosocial health, job performance

Undiagnosed hearing loss is a major public health problem. Persons with diabetes lose their hearing gradually and are typically unaware of the problem. Undiagnosed hearing loss negatively impacts both patients and their families, with detriments in emotional, financial, and medical well-being. The negative consequences of an undiagnosed hearing loss include confusion and stressful communication within families, poor or inadequate work performance, miscommunication between patients and their providers, and untreated medical conditions of the ear.

Section 4- Solutions for hearing loss: medical treatment, hearing aids, aural rehabilitation, counseling

Failed hearing screenings require a full diagnostic evaluation in an audiology clinic for a determination of the cause of the hearing loss, rehabilitation with hearing aids and/or a referral to an otolaryngologist for further medical intervention. The process of learning to hear again may take 6-12 weeks based on the severity of loss, the length of time being undiagnosed and will involve the support of family and the audiologist during the adjustment period. Since the effects of diabetes will continue to impact hearing, the audiologist will monitor hearing levels periodically based on medical need.

Section 5- Research and other training materials

Interpreting the audiogram, Types of hearing aids, Types of hearing loss, glossary of terms

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