

Practicing Preventive Audiology: Promoting Healthy Hearing

By James W. Hall III

Case scenario 1...a 30-something audiologist completed a routine diagnostic assessment of a 35-year-old patient referred by her primary-care physician for rather vague complaints of inconsistent difficulty hearing in certain settings.

The audiologist performed tympanometry, pure-tone audiometry, and phonetically-balanced (PB) word recognition testing at a comfortable loudness level. The patient's history was unremarkable for any obvious etiologies or risks for hearing loss, although she enjoyed listening to loud music.

Upon meeting the patient and walking with her back to test area, the audiologist noted the faint smell of cigarette smoke. The audiologist also observed that the patient was overweight and struggling a bit as she stepped into the sound-treated room. After the assessment, the audiologist informed the patient that her hearing sensitivity was within the normal range and a copy of the audiogram would be sent to her family doctor.

Now, fast forward to the same clinical practice 30 years later...same practice in the same town. The audiologist's hair is grayer but her purse is greener. She's a successful audiologist with a good reputation in town. A 65-year old woman comes to a scheduled appointment reporting that she is experiencing serious difficulties hearing people speak, particularly in noisy settings. The patient gets teary eyed when she describes how hard it is to understand what her young grandchildren are saying.

History reveals several systemic diseases, including diabetes and high blood pressure reflecting cardiovascular disease. The patient has also undergone multiple surgeries including hip replacement. The patient insists that she visited the clinic many years ago. Amazingly, the audiologist manages to find an old yellowed file under her maiden name with all of the original test results. Unfortunately, today the patient's audiogram confirms a moderate bilateral sensorineural hearing loss. Word recognition in quiet is only fair, and speech perception in noise is poor. Hearing aid options are reviewed with the patient after an explanation that she probably has an age-related hearing loss. I'll present another version of this case scenario toward the end of this brief article, but please first read the rest of the article.

There is mounting evidence that healthy living contributes to healthy hearing. Diet, as documented with the Healthy Eating Index (HEI), is a critical factor influencing hearing status over a lifetime (e.g., Spankovich, 2011; Spankovich and LePrell, 2014; Curhan et al, 2018).

Other healthy lifestyle choices, such as regular vigorous exercise, not smoking (or quitting ASAP), and consistent use of hearing protection during exposure to high intensity noise or music, also contribute importantly to preservation of good hearing. In addition, hearing impairment in adults is associated with a long list of common chronic diseases, for example, diabetes, cardiovascular

disease and stroke, rheumatoid arthritis, kidney disease, sleep apnea, and dementia. Conduct a literature search of "comorbidity" and "hearing loss" and you will find that the topic is attracting considerable clinical attention and research focus (e.g., Abrams, 2017).

Let's rewrite case scenario 1 while imagining for a moment that our young audiology friend was well aware of the link between healthy living, comorbidities, and hearing status. She always includes distorted product otoacoustic emissions (DPOAEs) in the test battery to detect cochlear dysfunction and also speech perception tests. And, the audiologist routinely incorporates extensive evidence-based counseling about lifestyle choices, supplemented with written patient information, into her clinical practice. And, the audiologist collaborates closely with primary-care physicians of her patients to mitigate the impact of co-morbid medical conditions on hearing loss and vice versa. Indeed, the audiologist approaches patient management with the bold assumption that she could prevent or at least mitigate age-related hearing loss.

We might expect a very different hearing outcome for the 65-year old longtime patient if the wise audiologist had effectively counseled the patient about the importance of healthy living for maintaining healthy hearing and, over the years, worked in tandem with the patient's primary-care physician. Based on current research, it would not be unreasonable to expect little or no

hearing loss when the relatively healthier patient returned for her 30-year follow up visit.

After reading this brief review, you may find the notion of preventive audiology interesting and perhaps even thought-provoking. Still, you may wonder why I decided to publish this article in ACAE Corner column of *Audiology Today*. Doctor of Audiology programs must prepare students today for evidence-based clinical services that audiologists will... or should...provide in the future (Hunter et al, 2016). It is likely that promoting healthy hearing over the lifespan will, in the near future, become an important clinical goal for audiologists. **AT**

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