

YOU'RE GETTING OLDER.

Are your listening demands decreasing?



Starkey

Some studies show that older adults report less exposure to noisy environments and have lesser communication demands than younger hearing impaired people.

Can assumptions be made about the lifestyle of hearing impaired patients that come in to clinics? Is age a good indicator of their requirements or should audiologists be looking at the more holistic picture and using self-report inventories and detailed clinical histories to determine true patient requirements? Galster and Stevens review some of the literature available on this topic.

Is it correct to assume that our older patients face fewer listening demands? After all, many patients with hearing loss are retired. Their lifestyle may not include the typical frenetic work-day that takes us to meetings, multi-talker conversations, and, hopefully, the coffee shop. Activities and lifestyle

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are important considerations for potential hearing aid users. The selection of advanced hearing aid technologies is often done with the implicit expectation that it better suits individuals who work or have active social lives, as compared to individuals with less social lifestyles in which a large proportion of time is spent at home or in quiet conditions.

The proposed assumption has been supported by studies showing that older adults report less exposure to noisy environments and less communication demand in a variety of environments (Garstecki & Erler, 1996; Kricos et al., 2007). Despite the fact that older adults



▲ Contrasting analyses suggest younger adults encountered higher sound levels than older adults.

are more likely to experience hearing loss and poorer word recognition ability, older adults generally report less hearing disability and less social or emotional impact from their hearing loss than younger adults do (Gatehouse, 1994; Gordon-Salant et al., 1994; Garstecki & Erler, 1996). One explanation for this apparent contradiction is the fact that older adults may have less demanding lifestyles than younger adults because they may encounter fewer challenging listening situations. This is assumed to be the case because older adults may participate in fewer social activities and have smaller social networks than younger adults.

This assumption that older adults experience less social interaction could be countered by the suggestion that retirement allows more time for social activities that could present communication challenges. In fact, following retirement, older adults report having more time to travel, visit with family, and volunteer (Wiley et al., 2000).

Auditory Lifestyle

Drs. Wu and Bentler of the University of Iowa investigated this same relationship between auditory lifestyles of younger and older hearing-impaired adults (Wu & Bentler, 2012). They hypothesized that older adults would have quieter, less demanding lifestyles and that the relationship between age and auditory lifestyle would be affected by how socially active the older individuals were. Twenty-seven adults with hearing loss, ranging from 40 to 88 years of age participated in the study. The majority of these participants were experienced hearing aid users. Auditory lifestyle, or the auditory environments encountered in typical daily activities, was measured using portable noise dosimeters. These dosimeters were capable of measuring overall sound level over time. Though the dosimeters were not capable of specifically measuring signal-to-noise ratio (SNR), previous work has indicated that high overall sound level is associated with low SNR (Pearsons et al., 1976; Banerjee, 2011). Therefore, the authors assumed that the dosimeter readings were providing an indirect measurement of the SNRs encountered in the participants' daily lives and offered an indirect assessment of their typical daily listening demands.

Participants supplemented dosimeter measurements with written journals describing listening situations.

Auditory lifestyle was evaluated with the Auditory Lifestyle and Demand Questionnaire (ALDQ; Gatehouse et al., 1999), which assesses the diversity of listening situations encountered by an individual. Social lifestyle was measured with three self-report questionnaires. The Social Network Index (SNI; Cohen et al., 1997) assesses the different social roles or identities held by an individual. For instance, a person could be a spouse, parent, employee, and club member. The Welin Activity Scale (WAS; Welin et al., 1992) measures the frequency of 32 activities, divided into three categories: home (e.g., reading), outside home (e.g., dining at restaurant), and social activities (e.g., visiting with friends). Additionally, the Social Convoy Questionnaire (SCQ; Lang & Carstensen, 1994) was included in the investigation. Previous research using the SCQ has shown that younger adults have more peripheral partners than older adults (i.e., a larger social network; Lang & Carstensen, 1994).

Analysis of the dosimetry measurements was conducted to determine the proportion of time participants spent

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in noisy conditions and the intensity of the sound they encountered. The sound levels encountered by both groups had a spread of approximately 30dB and, not surprisingly, the highest levels occurred in crowds and traffic and the lowest levels occurred at home. The measured sound levels were higher for younger listeners than older listeners for most of the frequently encountered listening events, though age-related differences reached significance for only two events: small group conversation in traffic and media listening in traffic.

Social Networks

Journal entries provided information about the proportion of time that subjects spent in speech-related activities in quiet and noisy conditions. Participants in both age groups spent the highest proportion of time listening to media at home, followed by small-group conversations at home and small-group conversations away from home. The proportion of time spent in phone conversations or outdoors was relatively small for both groups. There were no significant differences between young and old subject groups for the percentages of time spent in any of the activity categories.

Personalisation

Self-report inventories and detailed clinical histories that illuminate each individual's social and auditory lifestyle will help to arrive at decisions appropriate for the patient.

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or not older individuals experience fewer listening demands is a more complicated issue.

Self-report Inventories

Depending upon the analysis, the results of this study may suggest little age-related difference between groups, while contrasting analyses suggest younger adults encountered higher sound levels than older adults did in comparable listening situations. This difference may relate to behavioral as well as situational differences. For instance, younger adults might drive faster, listen to louder music, or drive on the highway more often than older adults, which would have the effect of increasing sound level measurements in these conditions. Similarly, if some of the noisy situations encountered by younger adults were in bars or clubs, they would yield higher sound level measurements than moderately noisy restaurants. Although the age difference for the dosimeter measurements was significant, the difference in mean levels was only 2.8dB. The authors question whether this difference is truly noticeable and appropriately point out that there were not strict controls on placement of the dosimeter packs, so variability in placement could have affected the measurements somewhat.

The findings of this study suggest that assumptions about age should not wholly dictate clinical decisions in structuring a treatment plan; rather, social activities and lifestyle must also be considered. Certainly, individuals of any age with diverse social activities will experience more listening demands than those with quieter lifestyles. Still, the experiences of employed individuals in the workplace may present more complicated listening demands for reasons other than overall sound levels and duration of exposure. Employed hearing aid users may experience stress related to their communication ability when interacting with co-workers, managers, and supervisors that is not comparable to the listening demand experienced in purely social situations with similar sound levels. Because the selection of hearing aids can be affected by all of these variables, self-report inventories and detailed clinical histories that illuminate each individual's social and auditory lifestyle will help to arrive at decisions appropriate for the patient. |

About the authors

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ALDQ scores assessed the listeners' auditory lifestyles, and although older subjects had lower scores, suggesting that older listeners experienced less demanding auditory lifestyles, there were no significant differences between the two groups. Social lifestyle was measured with the SNI, WAS, and SCQ scales. The only scale to yield a significant age-related difference was the SNI scale, in which younger listeners' scores indicated a more active social lifestyle. This difference is in keeping with previous reports and indicates that older listeners in this study had less diverse and smaller social networks than younger subjects.

A focused statistical analysis was done to understand the listening demand experienced by each age group. The authors found that older subjects had smaller social networks and were also likely to experience fewer listening demands than younger subjects. Additional analyses were required to determine that the effects of age on listening demand were mediated by social lifestyle. In other words, age alone does not predict listening demand, a person's social lifestyle must also be considered.

The results of this recent study indicate that younger and older adults have similar auditory lifestyles, in terms of the proportion of time they spend in speech-related activities, in quiet and noisy conditions. But whether