

Five Ideas to Better Meet the Hearing Needs of Older People

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Panelists for this session were asked to address the question “Are current audiological approaches for older people meeting their needs?” In this manuscript, the following five concepts that audiologists can pursue to better meet the special and unique hearing needs of older listeners are proposed.

- Develop a better clinical testing protocol to define the elderly patient’s global communication needs
- Match technology to the needs (and abilities) of the patient
- Integrate the patient’s social support structure into rehabilitation
- Extend rehabilitation beyond hearing aids
- Employ effective methods to enhance compliance

Let’s consider each of these suggestions separately.

- 1) The first is to develop a better clinical testing protocol to define the elderly patient’s global communication needs. The assumption underlying this proposition is that our current “comprehensive audiologic assessment” and “hearing aid evaluation” does not adequately define or address the unique set of needs for older listeners. Consider, for example, that in the United States the “comprehensive audiologic assessment” is defined as a pure tone audiogram (air and bone conduction) and monosyllabic word recognition scores in quiet. If a hearing impairment is demonstrated by these basic procedures, one may proceed to a “hearing aid evaluation” which may, but does not always, include sentence recognition in noise, open

ended subjective tools like the COSI (Dillon et al, 1997) designed to identify the communicative difficulties the patient would like to improve upon, measures of loudness discomfort levels, most comfortable levels, real ear to coupler differences, and informational counseling. Unfortunately, these procedures, while important, do not address some of the most common problems hindering the prognosis for our older patients. For example, it is known that threshold elevation can account for nearly all of the changes in speech perception with age in quiet or in less demanding listening environments (Humes 1996). In complex perceptual tasks, however, older listeners are more likely to demonstrate supra-threshold deficits in addition to the effects of reduced audibility than younger listeners. It is reasonable to assume that the perceptual and cognitive declines (resource limitations) that occur with aging, including slower speed of processing, reduced working memory, and increased attentional difficulties (characterized by difficulty in noise, with distractions and poorer executive control) contribute to this problem (Wingfield and Tun, 2001). Even in the absence of hearing loss, older subjects require 3–5 dB higher SNR than young listeners (Schneider, Daneman and Murphy, 2005). In addition, elderly hearing impaired patients are certainly no less susceptible than young hearing impaired patients to developing maladaptive compensatory behaviors and loss of confidence that may translate into social isolation, depression, and apathy. Furthermore, commonly used speech perception tests have only limited prognostic value regarding eventual success with hearing aids, particularly when conducted in quiet, and there is no evidence of a relationship between unaided speech intelligibility scores and self-reports of satisfaction and benefit (Taylor, 2007)

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Speech perception tests administered in background noise have a higher prognostic value, but even those fail to accurately predict success with an adequate degree of accuracy (Walden and Walden, 2004). Moreover, monosyllabic word or sentence tests do not take into account the contextual or interactive nature of conversation, or allow access to conversational repair strategies that occur in real life. Therefore, in order to define the elderly patient's global communication skills it is suggested that patients be given a comprehensive communication needs assessment. The Communication Needs Assessment (CNA) is comprised of measures beyond the audiogram that can be used to define residual auditory function. Domains measured include communication expectations and needs, sentence recognition in noise, tolerance of noise, ability to handle rapid speech, binaural integration (or interference), cognitive skills (working memory, speed of processing, executive function), auditory scene analysis, perceived handicap, confidence (self-efficacy), and vision. The assessment should consist of both subjective measures and objective measures. Examples of these measures include (but are not limited to) those shown in Table 1. Time and cost effective administration of all of these tests would be impossible in a clinical setting but it is not unreasonable to provide at least two objective and two subjective measures that help define

residual auditory function and the need for aural rehabilitation. Furthermore, it is likely, and important, that screening measures that can ascertain the important information gleaned from some of the more comprehensive tests listed in Table 1, will be developed and incorporated into clinical practice in the near future.

2) The second proposal is to carefully match technology to the needs (and strengths) of the patient. For example, it is vital to determine the patient's state of readiness to address hearing problems. This is particularly imperative because some elderly patients have been brought for professional help against their will and thus have poor motivation and even anger and frustration at the outset of the professional interaction. So it may help to use tools that ascertain "How important is it for you to improve your hearing right now?" Newman and Sandridge's COAT (2006) and Cox' ECHO (2000) may be appropriate and helpful in this regard. The audiologist must identify vital factors that may hinder achievement of success such as poor manual dexterity or vision. It is also imperative to not oversell a product. Elderly patients may be ashamed or reluctant to admit to having limited financial (or cognitive) resources. Depending on the social needs of the patient, the more expensive products may not be necessary. Also essential is to determine and prescribe products containing appropriate features. For example, it may be best to utilize de-

Table 1. Communication Needs Assessment-Measures beyond the audiogram that can be used to define residual auditory function (Sweetow R. (2007) Instead of a Hearing Aid Evaluation, Let's Assess Functional Communication Ability. *The Hearing Journal* 60:9, 26-31).

Objective procedures	Subjective measures	Combined (objective and subjective) methods
<ul style="list-style-type: none"> • QuickSIN • BKB-SIN • Hearing in Noise Test (HINT) • Acceptable Noise Levels (ANL) • Binaural interference • Dichotic testing • Listening span (Letter Number Sequencing) • TEN • Rapid (compressed) speech test • Speechreading • Dual-tasking 	<ul style="list-style-type: none"> • Hearing Handicap Inventory for the Elderly – Screening (HHIE-S) • Communication Scale for Older Adults (CSOA) • Communication Confidence Test or Listening Self Efficacy Questionnaire • Communication partner subjective scales (SAC and SOAC) 	<ul style="list-style-type: none"> • Performance Perceptual Test (PPT)

vices having automatic, rather than manual, switching between programs. This also includes telephone use, which may be particularly important for the elderly patient who communicates frequently with loved ones over the phone. It is wise to consider products containing automatic switching into and out of telephone mode. Unless absolutely essential, multiple, manually accessible programs, including mute, should be avoided. Another feature that may be helpful for the audiologist to determine compliance is datalogging, though it is important to recognize that some elderly patients take frequent daytime naps, so utilization may seem less than expected from an energetic, more socially and professionally active younger patient.

Audiologists also should recognize that every patient may have individual and different criteria for defining success or benefit from audiologic intervention. Criteria may include any or all of the following: ability to hear soft sounds and voices, comfortable loudness perception, improved localization, understanding of speech in noise, listening effort, minimizing fatigue, enhanced communication and listening strategies, improved confidence, ability to communicate over the telephone, and overall quality of life.

- 3) The third suggestion is to integrate the patient's social support structure into rehabilitation plans. This may not be as essential with younger patients with better cognitive skills, but for older patients it is important to identify communication partners and insist on their collaboration (including discussion of communication strategies and home acoustics), determine listening needs, alert patients about senior outreach programs, and perhaps offer (or at least refer to) group therapy and/or self-help groups that can not only educate patients, but also enhance social interaction. It is particularly important with this clinical population to recognize the need for outside referrals to other professionals such as cognitive therapists, psychologists, gerontologists, and social workers.
- 4) The fourth suggestion is to extend rehabilitation beyond hearing aids. Hearing aids are designed to provide access to acoustic information. However, communication, the ultimate objective for our patients, encompasses not only hearing, but listening skills, cognitive-based interpretation, and communication strategies (Kiessling et al, 2003; Sweetow and Sabes, 2004). Hearing aids may (or may not be) one

of the components of an overall rehabilitation plan, but a rehabilitation plan is not a component of hearing aids. In other words, the current tendency to supplement hearing aid fittings with additional therapy is misguided. Instead, hearing aids should, when there is a need to enhance audibility, constitute a portion of global plan of communication treatment.

From these data gleaned from the CNA discussed above, an Individualized Communication Enhancement Plan (ICEP) should be constructed to contain any or all of the following: education and counseling, communication strategies, individualized auditory training, hearing aids, assistive listening devices, and group education and therapy. The goal is to shift the focus from one that is product oriented (i.e. centered on hearing aids), to one that is process oriented (i.e. centered on enhancing communication). The reason for this change is straightforward. When the focus is placed on hearing aids, it can inadvertently create unnecessary restrictions on our ability to provide comprehensive care, and this can send the wrong message to patients and other stakeholders.

Unfortunately, despite evidence showing benefits from both group (Hawkins, 2005) and individual aural rehabilitation (Sweetow and Palmer, 2005), fewer than 10% of practicing audiologists offer comprehensive auditory training to patients with hearing impairment (Bloom, 2004). Some audiologist erroneously assume that hearing aids alone are adequate, that outcome measures don't justify additional therapy beyond amplification, that additional resources (time, money) are required, and that there is a lack of reimbursement (this assumption is largely true). In addition, many are reluctant to ask patients to spend more time or money. Also, it is possible that some audiologists may not advocate aural rehabilitation because they fear that failure for the patient to achieve adequate benefit (or even willingness to begin and complete the therapy) may reflect negatively on the professional.

Depending on the individual situation of the elderly patient, cost effective rehabilitation may be delivered in a group setting, or individually via home-based therapy. There are numerous examples of group formats including those published by Hickson et al. (2007), Abrahamson (1991), and Wayner and Abrahamson (1996). An example of an attempt to incorporate many of the global communication deficits facing the elderly listener into home-based therapy (via computer or DVD) is Listening and Communication

Enhancement (LACE: Sweetow and Sabes, 2006). LACE integrates exercise modules designed to enhance listening skills, auditory memory, speed of processing, and executive function by providing practice with speech degraded by means of mixing with multi-talker background noise, a single competing speaker, and compressed (rapid) speech. Also included are drills intended to stress the importance of context and linguistics. In addition, interspersed throughout the training are interactive communication strategies. All of these exercises are designed to enhance listening and communication skills and improve confidence levels.

It also is important to consider that the impact on minimizing the likelihood of elderly patients returning or not using newly acquired hearing aids early in the process may be dramatically altered by early training and patient involvement and is, therefore, quite important.

Regardless of the therapeutic approach selected, it must be recognized that there is a great amount of variability in success. Motivation, social support and physiological differences and limitations account for much of this variability.

- 5) The fifth suggestion is to employ effective methods to enhance compliance. Data collected from over 3,000 LACE trainees have demonstrated compliance (defined as completion of ten or more training sessions) of less than 30% (Neurotone, unpublished data, 2009). Lack of compliance with therapeutic recommendations is not limited to aural rehabilitation programs. Noncompliance with other medical treatments is abundant. One survey estimated that the percentage of patients who deviate from their prescribed medication regimen ranges from 5% to 80% (Olthoff et al., 2005).

Unfortunately, it is difficult to predict which patients are unlikely to comply as there does not appear to be defining characteristics as a group or any correlation with intelligence, age, gender, and economic background. There are, however, factors believed to influence compliance. They include a knowledge and understanding of the problem; the quality of the interaction including the patient-provider relationship; social isolation and social support including the effect on the family; health beliefs and attitudes; and factors associated with the illness and the treatment including the duration and the complexity of the regimen (Cameron, 1996). Other reported reasons include de-

nial of the problem, potential unpleasant outcomes or side-effects, lack of trust in professional's recommendations, apathy, symptoms disappearing before treatment is finished, life-style changes being too hard to make, work and family demands interfering with following the therapy correctly, and identifying the treatment with the illness. Also, important to consider is treatment cost, not only in terms of money; but also in terms of the patient's time, boredom, and risk of failure.

Despite the lack of evidence characterizing non-compliers, there are some factors that have been shown to influence the likelihood of compliance. Among those cited by DiMatteo et al, (1993) is overall past experience with the health care system. In a study of physicians and their patients with diabetes, heart disease, and hypertension, among the strongest predictors of patient adherence was initial, immediate compliance and whether patients got their questions answered. Lack of communication with the professional has a major influence on the likelihood of compliance.

The following are suggestions that may improve patient compliance.

- 1) Compliance generally increases if patients are given clear and understandable information about their condition and progress in a sincere and responsive way.
- 2) Simplify a patient's instructions or treatment regimen as much as possible.
- 3) Have systems in place to generate patient treatment or appointment reminders.
- 4) Listen and respect your patients' concerns.
- 5) Determine your patients' attitudes and past experiences. If, for example, your patient is firmly opposed to engaging in therapy, ask open-ended questions such as "When you came in today, what were you hoping I might do for you instead of prescribing this therapeutic approach?", "What are your main concerns about doing this therapy?", and "What do you think might happen if you do it?"
- 6) For home-based aural rehabilitation, conducting the first session face to face with the patient, and then having the patient proceed with training at home, can significantly increase compliance rates (Kingham, 2008).

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