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# 6

## *Self-Assessment Scales for Pre-Fitting Testing*

To this point, we have discussed objective pure-tone, narrowband, and speech recognition tests that can be used during the assessment prior to the fitting of hearing aids. We recommend also using self-assessment inventories to complement the objective findings. That is, some type of formal questionnaire completed by the patient that relates to their hearing difficulty, communication needs, the use of hearing aids, and their candidacy in general should be included in this pre-fitting battery.

In some ways, these scales are not much more than an extended case history, but they allow the clinician to collect information in an organized manner, and in most cases, the patient's responses can be compared with average data from large samples. The information collected using these inventories can significantly influence pre-fitting counseling and in some instances alter fitting decisions. In some cases, the scores collected before the fitting serve as a baseline, as they may be compared with results measured after a patient wears hearing aids for a period of time to directly quantify subjective hearing aid benefit, reduction in hearing handicap, or other outcomes of interest—we talk about this extensively in Book Three in the validation section.

As we reviewed in the previous chapter, there are many speech tests to choose from, and the notion is that we select a specific test to answer a specific question we might have about the patient (e.g., How much are they bothered by background noise? How well do

they understand speech in background noise?). The same is true regarding self-assessment inventories. There are pre-fitting inventories that are geared toward determining communication difficulty, whereas others are geared toward examining the patient's expectations. Others may be focused toward perceived handicap, how the patient judges loudness, or their motivation to use hearing aids. Once the audiologist determines the types of questions that need to be answered, an inventory that addresses these specific issues can be selected.

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### **Reasons to Use Pre-Fitting Self-Assessment Scales**

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To get us started, we first list a few areas where self-assessment pre-fitting tests might be helpful for the overall hearing aid fitting process. Our examples include names of specific tests. You might not be familiar with these tests just yet, but all are explained in detail later in the chapter. Here are seven general uses for standardized scales as part of the pre-fitting process:

- Assist in determining if a patient is a candidate for hearing aids.  
Example: A patient has a very mild hearing loss; normal hearing through 2000 Hz,

dropping down to a 40 dB loss in the 3000 to 6000 Hz range. The HHIE or APHAB scores, however, show significant handicap and considerable communication problems. This might lead us to make a different decision regarding amplification than if the HHIE or APHAB scores were consistent with someone with normal hearing.

- Determine the need for pre-fitting counseling. Example: On the STHP, the patient does not pass 7 of the 11 items on the adjustment subscale. Before being fitted with hearing aids, it might be wise to spend some time talking with the patient about how he or she has adjusted to having a hearing loss, or what other issues are driving this failing score.

- Assist in determining if a patient is ready to be helped.

Example 1: A patient has a bilateral downward sloping hearing loss ranging from 30 dB in the lows to 70 dB in the highs. The AI (for Audibility Index) is 38% for the right ear and 32% for the left. The scores for the HHIE and the APHAB, however, are consistent with someone with normal hearing. If this person denies these communication problems, will he or she accept the use of hearing aids? Is counseling needed before even attempting to move forward?

Example 2: A patient with a mild hearing loss scores in the 10th percentile for the motivation subscale of the HASP. Is this patient ready to accept and use hearing aids, or is the patient a *return for credit* waiting to happen? Why did the patient make the appointment for the hearing aid evaluation? Or did someone else make the appointment?

- Assist in establishing realistic expectations. Example: A patient with a moderately severe bilateral hearing loss is being fit with hearing aids for the first time. The results of the ECHO show that the patient believes that the use of hearing aids will resolve 100% of the communication problems, including understanding speech in

adverse background noise situations. It is probably best to readjust the patient's expectations before he or she begins to use hearing aids.

- Assist in establishing a baseline.

Example: The patient's results for the PAL and for the aversiveness scale of the APHAB reveal a low tolerance for loud sounds (e.g., the patient judges sounds to be Uncomfortably Loud when most individuals consider these sounds to be Loud, But Okay). This information might be helpful in setting the AGCo kneepoints at the time of the fitting and will be useful in interpreting the post-fitting ratings on these scales (e.g., the patient may complain that sounds are too loud despite seemingly appropriate hearing aid output settings).

- Assist in establishing goals to select and prioritize technology as well as providing topics that may require further counseling.

Example: A patient lists specific goals related to telephone use and listening in noisy restaurants on a COSI. This information is combined with the patient's speech recognition in noise performance and threshold information to make decisions related to prioritizing hearing aid features, appropriate expectations counseling, and appropriate telephone listening technologies. Establishment of specific hearing aid goals is critical for developing an intervention plan that targets each individual patient's listening needs and leads to increased patient satisfaction and use.

- Quality Assurance Management

Example: An audiology private practice has three different clinics in a large metropolitan area. The HASP is administered to all potential hearing aid candidates over a six-month period. The results from each clinic are analyzed to determine if the patient population is different. Motivation? Physical limitations? Cost? These findings could be used to change staff, test protocols or

**TECHNICAL TIP: A GOOD “QUICK SIX”**

Although we recommend the use of validated self-assessment scales, there will be times, for one reason or another, when administration will not be possible. Here are six open-ended questions that can be used to quickly obtain information similar to that obtained with related scales (adapted from Taylor & Mueller, 2011). It is actually reasonable to use these questions with all patients, as it will help establish your concern for the patient's problems and supplement the pre-fitting information gathered from other more formal measures. Remember, as we discussed in Chapter 2, once you have asked the question, you will need to sit back, quietly listen to the response, and make sure that you really hear the individual patient's answers without leading them to the most common answer.

1. Tell me what brought you into the office.
2. How long have you been noticing difficulty with communication?
3. Do other people notice you are having difficulty with communication?
4. Tell me about the areas you are having difficulty with communication.
5. Would you be willing to accept help or assistance with the difficulties you are having?
6. On a scale of 1 to 10, 1 being I don't need help and 10 being I need help right away, how would you rate your ability to communicate?

office procedures, or could be helpful in explaining different dispensing patterns among offices.

In this chapter, we review several different self-assessment scales that can be used in the pre-fitting process. Clinically, it is common to only use one or two of these with any given patient, although that is often related more to time constraints than the clinical value of the scales themselves. Most clinicians are likely to mainly use a favorite one or two with most patients and save the others for special cases. However, it is important to be familiar with as many as possible because all the measures we describe can provide unique and important information for at least a small number of patients.

Some clinicians comment that it would be nice to use pre-fitting scales more routinely, but they just don't have the time. Given how much information these scales can provide, however, we find that spending the time on appropriate pre-fitting measures up front can in fact save time by helping in the selection process and providing a focus on the most important counseling issues. In addition, there are some ways to facilitate administration to make the process as streamlined as possible. Ways to streamline the process include mailing the scale

to the patient so they can complete it at home before arriving at the clinic or having them complete the scale in the waiting room, with assistance from support personnel if needed. Although having the patient complete the scale on their own is certainly preferable to skipping the scale altogether, we have to be aware that data clearly show this leads to significantly less reliable answers than when questions are given to patients in interview form. Another way to increase efficiency is to administer a scale orally as part of the case history.

Regardless of the administration method, we highly recommend the use of modern computer technology to automate scoring. Without this, there may simply not be enough time to score the scale in an efficient enough manner to easily use the data during the selection appointment to facilitate selection and counseling. As the average patient becomes more computer savvy, this technology can also be used to facilitate administration—that is, the patient can simply complete a couple scales using a tablet (e.g., iPad), which is then handed to you when you begin your initial pre-fitting counseling. In some cases, a tablet can be used to complete the scale through an interactive interface that would be expected to improve reliability when compared with old-fashioned pen and paper administration.



### SOAPBOX: SOME THINGS YOU JUST HAVE TO MAKE TIME FOR!

We have all heard the old saying, “You can’t judge a book by its cover.” A saying that is maybe not as well-known, but is even more true is, “You can’t judge a hearing aid candidate by his audiogram.” Patients differ in so many ways that are not displayed in Xs and Os or word recognitions scores. There is an excellent battery of validated preselection self-assessment inventories available. They are easy to administer and score. The results of these scales will shape the fitting process, assist in technology decisions, and are invaluable for developing counseling strategies along the way. The routine use of these scales is not only a good thing to do, it is the right thing to do.

### A One Question Assessment?

It is even possible to obtain useful information from a pre-fitting questionnaire containing only one question. An example of this was reported by Palmer, Solodar, Hurley, Byrne, and Williams (2009). In a retrospective study of over 800 adults aged 18 to 95 years, these authors examined the relationship between the patient’s rating of his or her hearing ability, and their subsequent decision to purchase hearing aids. The patients were asked the following question:

“On a scale from 1 to 10, 1 being the worst and 10 being the best, how would you rate your overall hearing ability?”

The answer to the above question was then compared with whether the patient purchased hearing aids. Table 6–1 is a probability chart that resulted from the data analysis. Note that the results showed that there appear to be two distinct groups: those who are very likely to purchase hearing aids (ratings #1 to #5) and those who are likely not to purchase hearing aids (rat-



### KEY CONCEPT: SPOUSES, RELATIVES, AND FRIENDS WANTED!

In most cases, the pre-fitting self-assessment scales are completed during the pre-fitting appointment. Most professionals who have fitted hearing aids for a while say that it is important to have the patient who is seeing you for the first time to bring a companion with them. The companion, is someone who can make the consultative appointment more comfortable for the patient. In fact, subjective pre-fitting measures have been developed that are specifically targeted to significant others such as the HHIE-SP, described later in this chapter. Some reasons why we recommend having a significant other present during the pre-fitting appointment:

1. Provide details about the general health of the patient.
2. Give a second opinion about how the patient is communicating in daily living.
3. Facilitate discussion during the needs assessment and testing phase of the appointment.
4. Help the patient remember what was said during the evaluation.
5. Assist in making treatment and purchasing decisions.

**Table 6–1.** The Relationship Between the Patient’s Self-Rating of Hearing Ability and Probability of Purchasing Hearing Aids

Patient Rating of Hearing Ability (#1 = Worst, #10 = Best)	Predicted Probability of Hearing Aid Purchase
1	98%
2	96%
3	92%
4	83%
5	73%
6	58%
7	7%
8	20%
9	10%
10	6%

Source: From Palmer et al., 2009.

ings #8 to #10). Palmer and colleagues suggest that these initial ratings can be used to determine the best counseling approach for a potential hearing aid user.

## A Preview of the Assessment Scales

There have been a large number of inventories that have been introduced over the years. Rather than reviewing every measure, we have selected a subset that we believe are useful, and each of which provides unique information. More specific, we have selected seven different self-assessment inventories that can be used in the pre-fitting process. Here is a brief summary:

- Hearing Handicap Inventory for the Elderly/Adult (HHIE/A). Measures the degree of handicap for emotional and social issues related to hearing loss.
- Abbreviated Profile of Hearing Aid Benefit (APHAB). Provides the percent of problems the patient has for three different listening conditions involving speech understanding (in quiet, in background noise, and in

reverberation) and problems related to annoyance of environmental sounds (aversiveness scale).

- Expected Consequences of Hearing Aid Ownership (ECHO). Measures the patient’s expectations for four different areas: positive effect, service and cost, negative features, and personal image.
- Client Oriented Scale of Improvement (COSI). Requires patients to identify three to five very specific listening goals/communication needs for amplification. Can then be used to measure patients’ expectations related to these specific goals.



### THINGS TO REMEMBER: THE HANA HISTORY

If you review the literature related to the testing prior to hearing aid fittings, you may see mention of the HANA (Hearing Aid Needs Assessment). As far as we know, it is not a pre-fitting measure that has ever been used clinically, but here is a little history nonetheless. In 1999, Don Schum published a paper regarding the development of the HANA, in which it was used in conjunction with the Hearing Aid Performance Inventory (HAPI) outcome measure to determine if there was a relationship between patients’ perceived communication needs and expected benefit from hearing aids, and the benefit that actually was obtained two to three months following the fitting. Eleven items from the HAPI were used as the assessment questions. The test was designed so that subjects answered three questions for each test item, with a three-point rating scale for each (e.g., very little, some, very much). The three questions were: (1) How often are you in this type of situation?, (2) How much trouble do you have in this listening situation?, and (3) How much help do you expect the hearing aids to provide? Not too surprising, the overall findings revealed that expectations exceeded benefit, but it is interesting to note that those subjects with higher expectations for listening in noise had significantly higher benefit.