

The "Hearing Aid Effect" Revisited: Can We Achieve Hearing Solutions for Cosmetically Sensitive Patients?

Recent advancements in hearing instrument technology provide prospective hearing instrument users with a variety of choices and a greater chance of achieving both cosmetic and acoustic satisfaction from their hearing instruments than ever before in the history of amplification. Hearing instrument dispensers should be delighted by their increased potential to provide useful solutions to patients who may have been "unfittable" or impossible to satisfy in the

Despite these advancements, the literature and experience tell us that some patients' hearing instrument selections may still be driven by the fear of stigma or the "Hearing Aid Effect". The "cosmetics vs. performance" dilemma is faced by virtually all hearing health care providers and their patients. The hearing instrument dispenser-patient scenarios highlighted throughout this article may sound familiar and are provided to help illustrate our points.

By Carole E. Johnson, PhD & Jeffrey L. Danhauer, PhD

Recent advances in hearing instrument technology provide prospective hearing instrument users with a variety of choices and a greater chance of achieving both cosmetic and acoustic satisfaction from their hearing instruments than ever before in the history of amplification. However, some patients' selection may still be driven by the fear of stigma or the "Hearing Aid Effect," rather than the acoustic performance of the hearing instruments in maximizing their communication potential. Hearing health care providers should be aware of strategies for counseling prospective hearing instrument users about making the best choices for the right reasons. This article: 1) summarizes research confirming the "Hearing Aid Effect"; and 2) presents a survey from three regions of the United States regarding dispenser attitudes toward the "cosmetics vs. performance" issue, the profile of cosmetically sensitive patients, counseling strategies used with these patients, and suggestions for the hearing care field regarding the emphasis placed on hearing instrument cosmetics.

past. The advances in hearing instrument circuitry and shell designs coupled with the ability to make appropriate, accurate, and objective hearing instrument selections and evaluations via real ear probe microphone measures are truly changing clinical protocols related to hearing instrument dispensing.



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Hearing instrument dispensers know all too well that the above scenario occurs in every hearing instrument fitting office throughout the country with Mr. and Ms. Smiths of all ages. Patients' preoccupation with "how the hearing instruments look" may be: 1) just their excuse for refusing to try hearing instruments; 2) due to negative reports from unhappy hearing instrument wearers; 3) used as an excuse by patients who can not afford hearing instruments; 4) propagated by marketing that continues to focus on cosmetics and size of hearing instruments; and/or 5) the result of possible negative reactions to the visual presence of hearing instruments.

The cosmetically sensitive patient is a challenge for every hearing health care provider who dispenses hearing instruments. Are the fears of cosmetically sensitive patients justified? Do their cosmetic fears impede their ability to make correct decisions regarding selection of appropriate amplification? What can the professional do to counsel cosmetically

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"So, Mr. Smith, now that I've explained your audiogram, your hearing loss, and your need for amplification, what do you think?"

A long pause... "Hum... Isn't there some surgery or a pill that I can take so I won't have to wear hearing aids? I'd really rather not wear hearing aids at all... and you say I need to wear two? Well, then, if I must wear them, I want hearing aids that no one can see..."

At first, these comments go almost unnoticed. However, after explaining the newest advances in hearing instrument circuitry to Mr. Smith, the dispenser still hears, "but can you see those hearing aids?" It seems as if Mr. Smith failed to listen to anything the dispenser had to say.

The dispenser asks, "Are you concerned about people noticing your hearing instruments?"

Mr. Smith looks away and says, "I'm afraid of what my friends may think..."

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sensitive patients in order to meet their hearing health care needs effectively?

Hearing health care providers must recognize and counsel their cosmetically sensitive patients about making appropriate hearing instrument selections. Appropriate counseling is enhanced by having an awareness of research related to, and confirming, the existence of hearing instrument stigma. Effective counseling can be enhanced through knowledge of alternative techniques used by other hearing health care providers in assisting their patients' acceptance of, and adjustment to, amplification.

The purposes of this article are to: 1) review research from the past 20 years regarding hearing aid stigma, also known as the "Hearing Aid Effect"; and 2) present the results of a survey of dispensing audiologists' attitudes toward the "cosmetics vs. performance" issue, the profile of cosmetically sensitive patients, counseling strategies used with these patients, and suggestions for the hearing instrument industry regarding the emphasis placed on hearing instrument cosmetics.

I. THE "HEARING AID EFFECT" RESEARCH Early Findings

For at least 20 years, researchers have investigated the stigma experienced by persons who wear hearing instruments. In 1977, Danhauer and colleagues¹ first used the term the "Hearing Aid Effect" to describe how the physical presence of hearing instruments affects observers' attitudes toward the hearing instrument wearer. Although the early studies were completed prior to the popularity of in-the-ear (ITE) technology, they showed that the visual presence of hearing instruments on an individual can elicit negative reactions from observers having different backgrounds and experiences with persons having hearing impairment. The stimuli used in these studies were photographic slides of persons shown with and without hearing instruments. Typically, each person was depicted in three identical perspectives, differing only in hearing instrument condition (i.e., whether the person was wearing no hearing aid, a behind-the-ear (BTE) hearing aid, or body hearing aid). The slides were arranged into three groups, so that each group of slides: 1) was in the same order; 2) showed each person only once and in a different hearing instrument condition from that seen in the other groups of slides; and 3) contained the same number of slides of persons in each of the three hearing instrument conditions.

The observers who viewed these slides were also divided into three groups, each randomly assigned to see a different group of slides. Thus, each observer saw each subject one time in only one of the three hearing instrument conditions. The observers' task was to rate the subject either on semantic differential scales or to answer direct questions about the person depicted in the slide. Data gleaned from observers' responses were factor analyzed and submitted to analysis of variance.

Generally, the "Hearing Aid Effect" studies concluded that some individuals may be rated more negatively on factors such as achievement, intelligence, personality, appearance and socioeconomic status, as well as being older, when seen wearing hearing instruments as opposed to when instruments were not visible. In addition, the size of the hearing instrument frequently influenced observers' responses because persons were rated more negatively when wearing more obtrusive body-type hearing instruments than when seen with BTE hearing instruments, or no hearing instruments at all.

The "Hearing Aid Effect" was demonstrated for preschool children having normal hearing and speaking abilities who were rated by college students, speech-language pathologists, and audiologists²; school-age hearing instrument wearers rated by their peers³; school-age males who were normal hearing, hard-of-hearing and deaf rated by college students⁴; and elderly persons who were rated by college students and

their peers.^{5,6} Observers in these studies had no prior knowledge of, or contact with, the subjects depicted in the slides. Thus, observers' judgments were based solely on the visual presence of hearing instruments.

Contemporary Findings

Some recent studies have reaffirmed the existence of the "Hearing Aid Effect" in the 1990s, and current statistics indicate that only about 22% of persons with hearing impairment have purchased hearing instruments.^{8,9} Could it be that individuals who might benefit from amplification still shy away from hearing instruments because of how hearing instruments look or how the public may view the person wearing these devices?

Kochkin¹⁰ interviewed 250 hearing instrument specialists and dispensing audiologists by telephone asking the question, "Why don't people buy hearing instruments?" According to the interviewees, the three main reasons were stigma, vanity and cosmetics. Interviewees reported that their patients' fears included they might appear to be weak, frail, handicapped, old, retarded, ugly or be made fun of if they were seen wearing hearing instruments.

More recently, Kochkin¹¹ randomly assigned photographs of one of 13 hearing instrument styles (ranging from a large BTE hearing instrument to a completely invisible hearing instrument) to 6500 persons having hearing impairment. They were asked to indicate their purchase intent for the hearing instrument and to rate it on 19 image items. Respondents rated the less visible hearing instruments with the highest purchase intent. Furthermore, the smaller, less conspicuous hearing instruments were rated as more technologically sophisticated than larger, more noticeable hearing instruments. Kochkin concluded that, in order for BTEs to reach their full market potential, the industry must improve the overall image of larger instruments, teach dispensers to emphasize "optimum hearing solutions" over cosmetics, and/or reduce signal processing and circuit components to fit into nearly invisible instruments. Obviously, the "Hearing Aid Effect" is still present.

Advanced Technology: Invisible Hearing Solutions?

Recent advances in deep canal or completely-in-the-canal (CIC) hearing instruments are considered by some to provide several advantages to patients over any other style. These advantages include: 1) cosmetics; 2) reduced gain/output requirements; 3) greater high-frequency gain; 4) increased hearing instrument headroom; 5) reduction or elimination of the occlusion effect; 6) comfort and security of fit; 7) sound bore cerumen control; 8) improved performance in wind noise; 9) feedback reduction; and 10) normal telephone use.^{12,13} Another advantage of CIC amplification is the ability to obtain aided versus unaided responses using standard audiometric earphones. This could not be accomplished with other hearing instrument styles.

Preliminary findings with CICs report a high degree of consumer satisfaction from patients and from hearing health care providers who dispense these instruments.¹⁴ Recently, Mueller and colleagues¹⁵ surveyed 43 current CIC users with a response rate of 73.8% (i.e., 31/42) regarding their satisfaction with their current CIC instruments compared to their old hearing instruments on four dimensions of: 1) comfort and fit, 2) telephone use, 3) maintenance, and 4) listening factors. The CIC users "preferred" or "strongly preferred" their CICs over their previous hearing instruments on all four dimensions. Similar reports of early clinical success with CICs show that technological advancements made in hearing instrument circuitry and shell design by manufacturers may provide

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solutions to some patients' needs for both acoustic performance and cosmetics.

As part of our preparation for this article, we pursued the hearing instrument "cosmetics vs. performance" issue further by surveying attitudes of audiologists.

II. THE SURVEY
Methodology

A brief questionnaire was designed and mailed to 600 audiologists from the mailing lists of three American Academy of Audiology (AAA) state affiliate organizations representing different geographical regions of the United States: (1) West: California (288); 2) Midwest: Ohio (227); and 3) Southeast: Alabama (85). The respondents were requested to return the questionnaire within four weeks of the initial mailing. The results are probably a representative cross-section of how hearing instruments are presently being dispensed in this country.

Of the 600 total questionnaires mailed, 41.8% (251) were returned: 43.4% (125) from California, 35.2% (80) from Ohio, and 54.1% (46) from Alabama. Of the 251 respondents, 80.0% (200) said they dispensed hearing instruments; the remaining 20% (51) indicated that they did not dispense hearing instruments and returned incomplete questionnaires. Therefore, only the 200 responses of those who said they dispensed hearing instruments were analyzed.

The majority of the respondents (85.0% or 171) indicated that they had dispensed hearing instruments for over six years. The wide range (15 to 5000) of hearing instruments reported to be dispensed per year at their facilities suggests that we had tapped a representative sample of dispensers. When asked to name the most popular style of hearing instruments they dispensed, 50.5% (101) of the respondents said ITE style, 28% (56) said in-the-canal (ITC), 13% (26) said CIC, and 7.5% (15) said BTE. Responses from completed questionnaires were tallied and percentages of responses in each category were computed for each question. The survey items and percentages of responses to each item are shown in Tables 1 and 2. Only the general trends from the responses are discussed below; readers should refer to the tables for the complete data.

Results and Discussion

► **General Attitudes:** Table 1 depicts the results regarding the survey respondents' attitudes toward the "cosmetics vs. performance" issue. For simplicity in presenting the results here, the specific "strongly agree" and "moderately agree" categories were combined into a general "agree" category. The same was done for the "disagree" categories. The fact that 71% of the respondents agreed that "the public has initial reactions toward persons wearing hearing aids that make them somehow 'different' from those who do not" seems to indicate that these respondents believe that the "Hearing Aid Effect" still exists. Further, 81% of the respondents indicated that the hearing instrument industry perpetuates patients' preoccupation with cosmetics through advertising campaigns. Perhaps these respondents believe that, when advertisements emphasize cosmetics, they may create fears in people with hearing impairment that they are not accepted by society.

Interestingly, 81% of the respondents agreed that "there is a potential for consumer 'rip-off' by dispensers to prey on patients' fears of hearing aid stigma." This response may be fueled, in part, by the higher costs inherent in CIC technology. Although many people would probably concede that hearing care professionals should be able to charge "what the market will bear," most hearing health care providers would also agree that there are limits which, when exceeded, could contribute to a perception that hearing instruments are overpriced for the value received.

Of the 200 respondents, 63% agreed that CIC hearing

instruments show great promise for satisfying patients' cosmetic and acoustic performance needs. The fact that only about two-thirds of the respondents saw the potential benefits of CICs may be related to their knowledge and experience with these devices and may suggest that, as dispensers, we are at the beginning of the learning curve for CICs. This agrees with the recent findings of Powers and Mueller¹⁶ who investigated reasons for over 1280 CIC instrument return-for-credits to manufacturers. Their data indicated that most of the reasons for returns related to the dispensers' lack of experience with CICs and the need for pre-fitting patient counseling and precise impressions for these fittings to be successful. This trend should improve as dispensers become more familiar with CIC technology and factors related to a successful fitting. More will be said on this topic later in the article.

Even though CIC technology is not appropriate for all patients, 83.5% of the respondents felt that, in most cases, patients' cosmetic concerns and acoustic performance needs can be satisfied. However, 89% of the respondents agreed that some patients are so cosmetically sensitive that they

Table 1: Survey Respondents' (n=200) Attitudes Regarding Cosmetics vs. Performance Issues

1. The public has initial reactions toward people wearing hearing aids that makes them somehow "different" from those who do not wear them.						
Strongly agree	Mod agree	Neutral	Mod disagree	Strongly disagree	No response	
24.5%	46.5%	13.5%	13.5%	2.0%	--	
2. The hearing instrument industry perpetuates patients' preoccupation with cosmetics through their advertising campaigns.						
Strongly agree	Mod agree	Neutral	Mod disagree	Strongly disagree	No response	
50.0%	31.0%	10.0%	6.5%	1.5%	1.0%	
3. There is potential for consumer "rip-off" by dispensers who prey on some patients' fears of hearing aid stigma.						
Strongly agree	Mod agree	Neutral	Mod disagree	Strongly disagree	No response	
45.0%	36.0%	13.0%	4.0%	1.5%	0.5%	
4. CIC hearing instruments show great promise in satisfying both the cosmetic and performance needs of patients.						
Strongly agree	Mod agree	Neutral	Mod disagree	Strongly disagree	No response	
18.0%	45.0%	18.0%	13.0%	5.5%	0.5%	
5. There are some patients who are so cosmetically sensitive that they require special counseling into making the right decisions on style of the hearing aid.						
Strongly agree	Mod agree	Neutral	Mod disagree	Strongly disagree	No response	
39.5%	49.5%	6.0%	2.5%	1.0%	1.5%	
6. In most instances, patients' cosmetic concerns and need for performance in hearing aids can be satisfied.						
Yes	No	No response				
83.5%	12.5%	4.0%				

require extensive counseling regarding selection of appropriate hearing instruments to satisfy their acoustic performance and cosmetic needs.

► *Profile of Cosmetically Sensitive Patients:* Table 2 depicts responses to items which focused on developing a profile of the cosmetically sensitive patient. More than half (53%) of the respondents agreed that there is a difference between males' and females' cosmetic concerns in the selection of hearing instruments. Of those, over half indicated that males tend to be more cosmetically sensitive than females. Although a case can be made for men being more cosmetically sensitive than females (e.g., because of shorter hairstyles and the inability to conceal hearing instruments, perceived job security, prestige, etc.), the same could be said for women. Our experience causes us to question the respondents' ability to categorize men and women on this issue. We have found about equal numbers of both genders to be concerned over these cosmetic issues. While some are very concerned about people being able to see the hearing instruments, others give it little consideration. This issue is very sensitive to some and must be dealt with on an individual basis.

Notably, 62.5% of the respondents agreed that patients' age has an effect on how important cosmetics are in their selection of hearing instruments. The data suggest that the 36- to 50-year-old age group may be the most cosmetically sensitive. Here again, our experience causes us to differ somewhat from the survey results. We have found that patients of all ages are concerned about whether others can see the aids and how they look. This is particularly an issue with teenagers who have a strong desire to be accepted by their peers. Similarly, we have seen geriatric patients who sit at home all day and rarely socialize, but are also concerned about the visibility of their hearing instruments. Thus, given society's preoccupa-

tion with looks and style, patients of all ages are concerned about cosmetics.

Over three-fourths (77.5%) of the respondents agreed that the more severe the patients' hearing loss, the less cosmetically sensitive they are. Once again, experience causes us to question the respondents' ability to make this categorization. Many individuals with severe-to-profound deafness care a great deal about how their hearing instruments look. Perhaps more severely impaired patients have faced the dreaded resolve that cosmetically pleasing hearing instruments are just not powerful enough for their hearing losses. This does *not* mean that they do not care about the size of their instruments and how they look. Our patients having severe-to-profound hearing loss continue to ask why hearing instruments cannot be made smaller for them. As an industry, we are making great strides for those having lesser degrees of hearing loss; we must do the same for those with more severe problems.

In summary, the survey results are enlightening and the most common profile of the cosmetically sensitive patient may be a "Baby Boomer" with a mild hearing loss. However, hearing care professionals know too well that cosmetically sensitive patients can be male or female, young or old, and have varying degrees of hearing loss.

III. ACHIEVING HEARING SOLUTIONS

Shared Responsibility

Hearing health care providers, patients and the hearing instrument industry should all fulfill certain responsibilities in helping patients make decisions resulting in the best possible solutions for their hearing problems. Some of these concerns are discussed in the following sections.

The Hearing Health Care Provider's Responsibility

Hearing health care providers have a responsibility to be aware of the latest technology for their patients and maintain a state-of-the-art knowledge base. Interestingly, many hearing care professionals still do not use real ear probe microphone measurements in prescribing and evaluating hearing instrument performance for their patients. These objective techniques are invaluable to those who use them routinely, especially in fitting children and difficult-to-test patients who cannot, or will not, respond to other techniques. Likewise, we concur with several of the survey respondents who cited the benefits of hearing handicap scales and effective counseling in evaluating patients for, and fitting patients with, hearing instruments.

A recent survey of 4000 hearing instrument users by the American Association of Retired Persons (AARP) revealed that only 43% of consumers made positive comments about their hearing instruments.¹⁷ Kochkin¹⁸ found that fewer than 30% of audiologists routinely follow up with their patients to determine if they are satisfied with their hearing instruments. Such findings point to a critical need for hearing health care providers to focus more on consumer satisfaction and quality service.

The Patient's Responsibility

Cosmetically sensitive patients share in the responsibility of seeking appropriate hearing solutions for their problems. Please recall that most of the respondents surveyed agreed that there is potential for consumer "rip-off" by dispensers who prey on patients' fear of hearing aid stigma. Counseling by the professional is obviously important, but the patient should also take some responsibility for the fitting. Unfortunately, many patients painstakingly research brands of VCRs, automobiles, etc., prior to making a purchase, but rarely do the same

Table 2: Survey Respondents (n=200): Determining a Profile of Cosmetically Sensitive Patients

1. Have you noticed a difference between male vs. female patients' concerns over cosmetics in selection of hearing aids?

Yes	No	No response
53.0%	45.5%	1.5%

If yes, which are more cosmetically sensitive?

Males	Females	No response
59.4%	40.6%	0

2. Have you noticed that patients' age has an effect on how important cosmetics are in their selection of a hearing aid?

Yes	No	No response
62.5%	36.5%	1.0%

If yes, which age group seems the most cosmetically sensitive?

5-12	13-21	22-35	36-50	50-65	65+
0%	15.2%	12.0%	42.5%	13.6%	5.6%

(No response = 11.2%)

3. Have you found that the more severe patients' hearing losses, the less cosmetically sensitive they are?

Yes	No	No response
77.5%	22.0%	0.5%

for hearing instruments. Many people spend more time picking out a pair of shoes than they do a set of hearing instruments. Consumers may associate hearing health care providers who dispense hearing instruments as "doctors" who are obligated to provide the best in patient care. People tend not to ask enough questions regarding their health care.

*Consumer Reports*¹⁹ published an article about how to buy hearing instruments which covers hearing diagnosis, hearing health care providers' certification requirements, precautions, patient expectations, hearing aid styles, circuitry, cost, technology, monaural vs. binaural fittings and adjustment to amplification. Several respondents said that they use this article to educate patients before the fitting.

Potential hearing instrument users should obtain recommendations from friends and relatives who are hearing instrument wearers. Family members and peers can provide objective information about who to see and what to expect. Potential hearing instrument users should have an opportunity to talk with hearing instrument wearers who have varying degrees of satisfaction with their hearing instruments. However, patients should realize that their hearing loss and lifestyle may warrant *different solutions* from those of their friends. If a friend was fitted inappropriately or with old technology, patients should remember that the "sour grapes" should not apply to them. Realistic expectations from the outset can reduce patients' disappointment if complications should arise with their fitting. Patients should understand that while the hearing instruments will not give them "bionic" hearing, they should be of benefit in almost all communication situations, if appropriately fit.

Patients should be aware of the importance of being proactive in their hearing instrument fittings by regularly wearing their hearing instruments during their trial period. They should acknowledge this as their responsibility, both orally and by their actions. Patients should provide both positive and negative feedback to their hearing health care professional concerning issues such as: comfort, fit, manipulation and speech intelligibility in a variety of communication environments. Hearing health care professionals are not clairvoyant as to the needs of their patients and regular communication between patient and dispenser during the trial period is crucial in achieving hearing solutions.

The Hearing Instrument Industry's Responsibility

Several respondents to the survey made suggestions for the hearing industry regarding the public's preoccupation with cosmetics. Some suggested having young people and celebrities (particularly those who actually wear hearing aids) model hearing instruments in advertisements so that they are not associated with old age. Several cited how President Reagan's hearing instruments boosted the industry while he was in office.

Many respondents suggested that advertisements should emphasize hearing instrument performance rather than cosmetics, and that the hearing industry underestimates consumer intelligence. They stated that hearing instrument advertisements that primarily emphasize cosmetics patronize the consumer and reinforce the idea that the patient should be ashamed of a hearing loss and should therefore try to hide it. Some hearing instrument manufacturers have developed straightforward explanations of available circuitry and measurable effects on auditory performance for consumer education.

In 1996, the first of the "Baby Boomers" will turn 50 years of age. By the year 2030, there will be 59.4 million people over the age of 65. Who knows, maybe being over "fifty will be nifty." Marketing will be aimed at persons in that group because they will have the most buying power. Some people expect the faces on advertisements to change. Instead of those under 30 being in ads, "real people" of all ages will sell products. Having a hearing loss, traditionally associated with old age, may be just another acceptable part of life. Likewise, because the "Baby Boomer" generation is "high-tech", the hearing industry may focus on technological aspects of hearing instrument performance rather than cosmetics in the decades to come.

IV. COUNSELING COSMETICALLY SENSITIVE PATIENTS

The respondents in our survey were also asked to provide any special counseling techniques and information they use in seeking appropriate hearing solutions for their cosmetically sensitive patients. Many respondents wrote notes in the margins of the survey and some mailed us their protocols. As expected, suggestions differed according to different patient scenarios. The following summarizes some of their suggestions.

► *Potential Hearing Instrument Users:* Based on the "Hearing Aid Effect" literature, it is logical that some cosmetically sensitive patients reject pursuing amplification solely on the basis of negative reactions from the public. Many of the respondents suggested stressing to these patients that a hearing loss is more noticeable than hearing instruments. This suggestion parallels the conclusion we made over 10 years ago in summarizing our research on the "Hearing Aid Effect."²⁰ Although the visual presence of hearing instruments may trigger initial negative reactions from the public, we believe that the public ultimately judges each hearing instrument wearer based on his/her entire person. Thus, the hearing instrument wearer can replace initial negative impressions with positive ones through appropriate amplification coupled with aural rehabilitation and his/her own personality traits.

Many cosmetically sensitive patients can accept this argument and will try amplification, especially when they realize that they have a 30-day trial period before making their decision about keeping the hearing instruments. One respondent noted (and we concur) that it is sometimes necessary to extend the trial period for some patients. Another respondent suggested a policy (which we believe has merit) to not accept payment for the hearing instruments until the end of the trial period when the patient and the family have decided whether the hearing instruments have positively changed their lifestyle. Although this reduces the patient's responsibility, patients are less likely to delay in trying hearing instruments because they know they will not have to pay for them unless they are completely satisfied. This process puts the onus on the dispenser, not on the patients, and assures them of the dispenser's confidence in being able to meet their needs. Others indicated that they do not charge any more for trying binaural over monaural hearing instruments which also encourages patients to try (at least) binaural amplification from the start.

A particularly effective technique offered is to ask potential hearing instrument users to examine their own prejudices. For example, earlier in this article, we presented a scenario of Mr. Smith and his hearing instrument dispenser discussing his need for amplification. Recall that Mr. Smith was afraid of what his friends might think about how he would look wearing hearing

instruments. Let's pursue this scenario here.



"Mr. Smith, if you noticed that one of your friends started wearing hearing instruments, would you think any less of him?"

After thinking a moment and snickering, Mr. Smith remarks, "I sure wish John Jones would get a hearing aid...It would sure help in poker. No, I wouldn't think any differently of him. In fact, I'd be glad for him."

"See, I bet your friends would feel the same way about you! You told me that you've been having a difficult time understanding speech in certain situations. Maybe your friends have noticed your problem too, but haven't said anything to you about it...You know, hearing instruments are less conspicuous than a hearing loss..."

"I never thought about it that way," reported Mr. Smith. "Did you say I need one for each ear?"



► **Binaural vs. Monaural Fittings:** Once cosmetically sensitive patients have agreed to at least try amplification, they may question the rationale for two hearing instruments. One respondent in the survey provided the best suggestion for effective counseling in three words: educate, educate, educate! Hearing health care providers should not underestimate the ability of their patients to understand psychoacoustic rationale for binaural fittings, and they must present this information at an appropriate level for each patient. For example, it would be unwise to present information in the same manner to a "Baby Boomer" engineer and an 80-year-old great-grandmother who has no science background. Let's return to our scenario with Mr. Smith.



"Since you have hearing loss in both ears and your ability to understand words in background noise is about the same in both ears, I would recommend that you try two hearing instruments."

"Would I really notice the difference?" asks Mr. Smith.

"Yes, you should. First of all, if you only wore one hearing instrument, you would probably feel unbalanced, much like wearing a corrective lens for only one eye, if you had a visual problem in both eyes. One ear would hear so much better than the other that the ear without the hearing instrument wouldn't appear to get much use. Second, two hearing instruments will help you localize sounds to tell from what direction they are coming. Third, hearing with two ears should help you to understand speech better in quiet situations, and possibly even in noisy backgrounds as well. The latter is very individualistic and will probably be noticed during your trial period with the aids. You see, when the brain receives input to both ears in a noisy environment, it is more able to suppress the noise and help you concentrate on what is being said. Finally, when you only have one hearing instrument, you must constantly position yourself to ensure that your communication partner is on the same side as your hearing instrument."

"Wow, but aren't two hearing aids twice the price and up-keep of a single hearing aid?"

"Yes, but you will have a 30-day trial period to determine if you experience these benefits from wearing two hearing instruments before you need to decide to buy them."

"Well, if I wear two, can it be that invisible kind?"



► **Selection of Appropriate Style:** Guiding cosmetically sensitive patients' selection of an appropriate style of hearing instrument poses a formidable challenge to hearing health care providers. Satisfied patients are usually those whose need for cosmetics and acoustic performance have been met. Most of the respondents surveyed reported that the hearing health care provider should clearly present the pros-and-cons of all styles of hearing instruments along with their best rec-

ommendation for each patient.

Some reported that they only show patients styles of hearing instruments that would be appropriate for each individual patient's degree of hearing loss. While this strategy may be effective in controlling patients' behavior during the initial counseling phase, we believe that this approach is somewhat deceptive or incomplete. If patient education is our goal, then patients should be provided with an explanation of the pros-and-cons of *all* hearing instrument styles. Invariably, patients talk to each other and compare their hearing instruments with their friends'. It is important that patients know why they are using their particular types of hearing instruments. Proper education at the initial fitting can alleviate a lot of headaches later.

Several respondents reported that professionals should learn to listen effectively to their patients in order to establish rapport and trust and to gain a complete understanding of their problems. While it is important to validate patients' fears about potential hearing aid stigma and cosmetic concerns, professionals should stress that achieving better hearing is the first goal and that cosmetics are secondary. This can be a difficult task for some patients. Hearing health care providers must guide cosmetically sensitive patients into the selection of a style of hearing instrument that meets their communication needs while being as cosmetically pleasing as possible. Patients will usually make the right decision if presented with accurate information from a trusted professional.

Despite effective counseling, some cosmetically sensitive patients may select hearing instruments solely on the basis of their cosmetic appeal, against the recommendation of their hearing health care provider. The survey respondents dealt with these patients in a variety of ways. Some reported that they would tell these patients that they could go elsewhere if they disagreed with their professional opinion. We do not necessarily agree with this tactic because patients will do just that; they will shop around until they find someone who will fit them with what they insist upon, even if it is of little help to them. We often see them months later complaining about how they got "ripped-off" from the guy down the street and, ultimately, we have to rectify the problem in the end. It makes sense to spend the time and counseling necessary in the beginning.

Other respondents reported that they would comply with patients' choices. Thus, the patient could discover during the trial period that the most cosmetically appealing hearing instruments may not satisfy their acoustic needs, and then would follow the recommendations of their hearing health care provider. We tend to agree with this position.

Let's return to our scenario with Mr. Smith.



"You want to wear the invisible kind?" says the dispenser.

"Yes, a colleague at work showed me his and they went deep into his ears. If I must wear hearing aids, I'd like to wear those," says Mr. Smith.

"Those are called completely-in-the-canal or CIC hearing instruments. Let me show you all of the styles of hearing instruments and explain their pros-and-cons."

Mr. Smith is shown each style of hearing instrument. The dispenser has two examples of each style, one for the patient to examine and another to model for the patient.

After studying each style, Mr. Smith says, "Like I said, I like the completely in your ear type."

"Mr. Smith, remember when I explained your audiogram to you? Recall I said that your hearing is near normal in the low frequencies, but is poorer in the mid and higher frequencies. After listening to your complaints, viewing your ear canals and seeing that they have no excessive amounts of cerumen or wax and no other anomalies, noting that you have good dexterity with your fin-

psychoacoustic binaural advantages, they just could not prove them in their standard test paradigms. Fortunately, the hearing industry continued to advocate binaural fittings when they were appropriate, and most dispensers realized that they would have to modify their hearing instrument selection/evaluation protocols to include questionnaires, hearing handicap scales, and hearing aid benefit surveys involving the patient and family, as well as make formal testing more dynamic in order to document some of the benefits that manufacturers and satisfied patients claimed from wearing two hearing instruments.

Today, most dispensers take the manufacturers' and patients' desires for smaller, cosmetically pleasing hearing instruments more seriously. This is easier to accept because, while hearing instruments are smaller and more cosmetically pleasing, some remarkable new technology (e.g., wide-band dynamic compression, digitally programmable and multichannel circuits) allows many patients to enjoy major acoustic benefits from their hearing instruments in quiet, in groups and in background noise, as well. Some of these improvements work well in ITE and BTE models, but many dispensers are now finding that they work even better in CICs.

Indeed, many dispensers have witnessed major improvements in the acoustic benefits of CICs for patients that parallel those reported by Mueller et al.¹⁵ Most of the benefits of deep-fitting CICs cited earlier are derived from the fact that the physics of CIC-ear canal interaction (i.e., smaller cavity between the end of the hearing instrument and the eardrum that produces a smaller volume and thus increased sound pressure level) are more advantageous than with other hearing instrument designs. The manufacturers' persistence and researchers' abilities to produce hearing instruments that are not only smaller, but better acoustically, may finally permit dispensers to meet the needs of more persons with hearing impairment—even the “cosmetic nightmares” of the past. Unfortunately, this technology is mainly appropriate for mild-to-moderately severe hearing losses at this time. Similar advances are needed for patients who are more severely impaired.

Fortunately, this new technology is as appropriate for young children as it is for middle-age or older patients. After about 9-12 years of age, the pinna and ear canal do not change appreciably. This is also the time when many adolescents become very concerned about the looks of their hearing instruments. We have found that many manufacturers are willing to remake canal and CIC hearing instrument shells if changes are needed during this important time in order to meet the adolescents' cosmetic and acoustic needs.

The following is a good example of our experience with this new technology. We recently fit CICs on an 11-year-old boy and on a very active 92-year-old woman on the same day. Both patients are completely satisfied with their instruments, but were very concerned about how hearing instruments would look to others. In fact, they are delighted with their CICs and almost do not even consider themselves to be hearing instrument wearers anymore. They both prefer their CICs over their previous ITE styles, not because no one can see the hearing instruments; the main reason is they hear so much better. This is confirmed by our probe microphone measurements and by the fact that both patients now have earphone independent aided-ear thresholds within the normal hearing range through most of the frequency spectrum, have SRTs of 10 dB HL or better, and word recognition scores in quiet of 100% at 50 dB HL with their new CICs. They also report wearing their CICs for up to 14-

hours-a-day compared to only about 6-8 hours for their old ITEs. The older patient even said she sometimes forgets she has her CICs in, but that she often could not wait to get home from meetings so she could remove her old ITEs. Indeed, they have praised the benefits of their CIC fittings to their friends and have recommended several new patients to us for CIC fittings; they have become ambassadors for hearing instruments. Previously, we suspect they would have been dissatisfied hearing instrument wearers. This type of scenario is not only good for business, it is also good for the profession and may indicate that we are, in fact, making some important improvements in being able to get more of the population that needs amplification to finally try it.

The foregoing raises the issue of whether we should be trying to eradicate the “Hearing Aid Effect” or embrace it. We believe both are appropriate. Our conclusion is that some present hearing instruments (i.e., CICs coupled with new circuitry) provide acoustic advantages while reducing the noticeability of the hearing instruments, and may make the cosmetic problem a non-issue for many patients. Obviously, techniques at reducing patients' fear of the “Hearing Aid Effect” are still necessary for those for whom CICs are inappropriate. Further, fear of the “Hearing Aid Effect” is the primary reason that people having hearing impairment fail to seek help in the first place. The examples and suggestions presented here from respondents to our survey should be helpful to dispensers in seeking hearing solutions for the cosmetically sensitive patient. ■

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