

**Experiences of Anxiety-Related Resistance  
to a Cochlear Implant:  
A Case Report for Audiologists  
Counseling Adult Implant Candidates  
With Acquired Hearing Loss**

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While the literature is growing in the field of cochlear implants, and its benefits are increasingly documented, there is not yet a clearly established strategy for addressing emotional resistance from adults (particularly those with acquired hearing loss) who otherwise are ideal candidates for an implant. This paper presents a case report through which the authors discuss anxiety-related resistances to cochlear implants and implications for audiologists who advise clients as they consider implant candidacy. The case report describes the normal defenses, fears, and anxieties of 1 client and the perspectives of his audiologist, both of whom co-authored this paper. While the authors do not suggest that audiologists establish a psychotherapeutic interaction with prospective implant candidates, they affirm the importance of actively seeking to identify a client's anxieties manifested through client-audiologist dialogue. The authors further suggest providing clients with literature that can help clients recognize and ex-

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press their questions, concerns, and anxieties related to the process of implant surgery and device use and to use the referral process to facilitate change.

## INTRODUCTION

Despite the inherent risks and benefits of invasive surgery such as the procedure for a cochlear implant, it is not uncommon to overlook a client's emotional preparedness or response to the procedure, while emphasizing the medical aspects. In the world of hearing loss, a physician or audiologist may address the hearing outcome without attending to the psychosocial milieu or context in which the procedure would take place.

A multidisciplinary approach to client care in the field of cochlear implants has long been advocated (see, for example, Fraser, 1991). An example of a program targeted to improve overall communication and coping skills following implant surgery is one described by Heydeband, Mauze, Tye-Murray, Binzer, and Skinner (2005). Although an ideal cochlear implant team would include a social worker or psychologist to address the emotional needs of every client who is evaluated (Aplin, 1993), some teams may not have such clinicians on staff, perhaps as a cost-cutting measure under today's systems of managed care. The role of counseling adults who are seeking cochlear implants can then fall to an audiologist who may not be prepared to address the emotional impact of hearing loss and anxiety-related resistance to intervention. Pre-service and in-service programs may or may not deal with counseling issues and techniques (examples include English, Mendel, Rojeski, & Hornak, 1999 and Vargo & McFarlane, 1994), leaving clinicians with a lack of confidence in their training in this area (Martin, Barr, & Bernstein, 1992).

Lack of training may be partly to blame for lack of satisfaction among some adults who seek audiologic services. A survey of members of the Self Help for the Hearing-Impaired organization (SHHH) revealed that many respondents who visited audiology clinics regretted not receiving more information on rehabilitation and how to cope with hearing loss (Wendt-Harris, Pollack, & Lassere, 2001). The majority of clinics visited by the SHHH survey group were said to focus on hearing aid dispensing and failed to look beyond the ear to address a client's overall needs. Aguayo and Coady (2001) reported that Canadian adults with acquired hearing loss who needed counseling did not always receive referrals. Some clients have also expressed dissatisfaction with the knowledge and attitudes of their service providers (David & Trehub, 1989).

A rehabilitative model of service delivery, as versus a medical or clinical model, is one that fosters interactive communication between audiologist and client, particularly about the psychological aspects of hearing loss and feelings toward intervention. There are broad benefits to be gained from implementing such a model. For example, when clients are engaged in the identification and management of their problems, they may be more motivated to participate in the

process and follow through with recommendations. Erdman, Wark, and Montano (1994) described the complex nature of compliance as it is affected, through treatment, by states generated within the client (and external to the client). Although it is not in the purview of the audiologist to assess or manage clients' psychological needs, acknowledging the emotional impact of hearing loss may facilitate forward movement toward positive change. Babeu, Kricos, and Lesner (2004) identified specific ways within a Stages-of-Change model that clients can be brought to the point of seeking and accepting needed professional help for a hearing problem.

Because hearing loss in later-deafened adults affects both communication and psychosocial functioning, it has been characterized as a quality of life issue, sometimes contributing to depression and anxiety (Heine & Browning, 2002). Hickson and Worrall (2003) developed interventions that focus on quality of life via an interactive, problem-solving approach. Their objective was to treat specifically the limitations and restrictions imposed by communication difficulties rather than just the hearing loss or hearing aid. The authors reported positive effects from participation in their Active Communication Education program by a group of older adults who self-identified as having hearing difficulties, particularly in the areas of knowledge and strategies related to everyday communication skills. Their Keep on Talking program was for older individuals who did not consider themselves to be hearing impaired. Its purpose was to prevent communication disability and increase understanding of what to do if communication difficulties occur in the future.

While it is common to find the rehabilitative model of service delivery applied in group settings, one can question whether issues of anxiety and resistance to audiologic intervention are amenable to a group approach. Hawkins (2005) summarized evidence to suggest that adult programs conducted in groups, while generally successful in the short term, may not have a lasting effect compared to the benefit from amplification alone. It is the opinion of the authors of the current report that it is advantageous to use a one-to-one approach to explore the powerful psychological concerns associated with hearing loss and intervention, especially anxiety-related resistance.

### **Anxiety-Related Resistance to Intervention**

Anxiety-related resistance can be rooted in the fear of outcomes, whether real or imaginary, of a recommended intervention. While anxiety can be a product of unconscious processes, according to Gabbard (2000) it can also be part of a conscious, acceptable fear that covers up an underlying concern the person is unaware of and would find to be less acceptable. Gabbard goes on to state that anxiety may signal the presence of perceived psychic danger and can mobilize defense mechanisms to respond to the danger. Thus, as discussed in the psychotherapy literature, resistance refers to a process of avoidance that helps the in-

dividual defend against harm or undesirable feelings (Dewald, 1969). In this paper we are not conceptualizing anxiety-related resistances to a cochlear implant or attempts to defeat the implant team as necessarily conscious or unconscious. Rather, we are dealing simply with resistance as a self-protective mechanism to decrease anxiety regarding feared outcomes of the implant procedure. We also wish to restrict comments in this paper to adult clients who are born with normal hearing and experience hearing loss later in life.

Anxiety and resistance to audiological intervention may be amenable to change. According to the Health Belief Model, health-related behavioral change is ultimately the result of a change in beliefs, and can be influenced by appropriate counseling (van den Brink, Wit, van Kempen, & Heuvelen, 1996). Thus, to the extent that counseling is included as a component of aural rehabilitation programs, behavioral change can occur in a client who resists considering a recommendation for a cochlear implant. Psychological viewpoint or attitude has been found to be highly predictive of aural rehabilitative outcome, even more than severity of hearing loss (Brooks & Hallam, 1998; Garstecki & Erler, 1998; Jeram & Purdy, 2001; Kricos, 2000; van den Brink et al., 1996; Weinstein, 1994). Van den Brink and colleagues (1996) examined the attitudes of 624 individuals with hearing loss towards seeking services. After controlling for hearing loss, these investigators identified three categories of individuals: (a) those who viewed their hearing loss as inconsequential and, thus, were not motivated to seek help; (b) those who viewed hearing aid use as stigmatizing and, although motivated, did not follow through in trying an aid; and (c) those who had a favorable attitude towards hearing aids and received services.

Beliefs are not only internally generated, but are also subject to external influences. Franks and Beckmann (1985) commented on the effects of social pressure and attitudes of significant others on hearing aid use. In particular, they found that calling attention to one's handicap was one of the primary reasons for rejecting a hearing aid. Social factors have been found to affect quality of life in individuals who use a cochlear implant, as well. In a study of 96 adults with cochlear implants, Hallberg, Ringdahl, Holmes, and Carver (2005) reported that nearly half of the variance on scales of general well-being and implant outcome was explained by attitudes from others, restricted social participation, and perceived social support.

Reasons for resisting a cochlear implant may include more issues than are involved in rejecting hearing aids. Given the criteria for candidacy, prospective implant recipients have more hearing loss than most hearing aid users and must accept the risks of surgery and loss of residual hearing in the implanted ear. A client's vocational prospects, interpersonal relationships, and psychological health in general may rest heavily on the outcome of the implant decision, which may explain why some individuals tested during implant candidacy exhibit more depression and anxiety than adults in the general population (Knutson et

al., 1991).

Implant use itself can reduce anxiety and distress, as described in interviews with adult implant recipients who spoke of a profound sensation of “coming back to life” (Hallberg & Ringdahl, 2004). Nonetheless, as with hearing aids, the psychological benefit of an implant cannot be predicted simply from hearing outcomes (Knutson et al., 1998). Hattori et al. (2000) evaluated anxiety and personality before implant surgery and after switch-on. In their group of 10 adults, 3 individuals were classified as neurotic or provisionally neurotic, and were anxious about surgery or switch-on. After the operation, anxiety was measurably reduced in 4 out of the 10, and in another 4 after switch-on. These findings emphasize the fact that surgery itself, as well as the potential outcome (effect on hearing function), can be a major anxiety factor, although only 9% of the 41 implant recipients who responded to a pre-implant questionnaire administered by Tyler (1994) listed the risks of surgery as a disadvantage. Based on their own findings, however, Hattori et al. (2000) recommended investigating anxiety to determine how to support implant candidates in both the pre- and post-implant periods.

Through the following case report, the authors provide examples of the barriers that audiologists might be prepared to recognize as arising from a prospective implant client’s concerns. The authors suggest that apparent ambivalence regarding a cochlear implant may be a result of anxiety-related resistances and that these resistances can be significantly diminished by acknowledging emotional factors, by teaching clients factual information that addresses their specific fears and beliefs, and by making referrals where appropriate.

### CASE REPORT

This case study presents the reflections of co-author B.B., an implant recipient, who is also a psychotherapist, and his audiologist, R.C.H.. B.B.’s history of audiological interventions and his psychological response to his hearing loss over time are reviewed, as well as outcomes following cochlear implant surgery.

#### History of Hearing Loss

B.B. had a history of exposure to loud music at concerts, after which he experienced ringing and a sense of fullness in both ears, accompanied by some perceived hearing loss. At age 23, B.B. sought an evaluation at his university health service and was told that he had suffered acoustic trauma and should stay away from loud music. B.B. believed that his loss was temporary and could be minimized by limiting noise exposure. He did not anticipate any permanent effects and was unwilling to give up his music. He tried stuffing cotton balls in his ears and stood further away from the loudspeakers, but emerged on each occasion with worsening symptoms.

It was not until B.B. was 31, when he perceived significant hearing difficulty,

that he again sought an audiologic assessment. Outside of the noise exposure, B.B.'s history was unremarkable. Audiometric thresholds obtained at this time were in the mild-to-moderate range in both ears, but it was not until 4 years later that B.B. accepted a behind-the-ear hearing aid in the left ear. After another 3 years, B.B. began to use an aid in the right ear, as well. Figure 1 shows that B.B. was able to attain good speech understanding with his binaural hearing aids under favorable noise conditions on the Synthetic Sentence Identification (SSI) test (Jerger, Speaks, & Trammell, 1968). Thereafter, B.B.'s hearing loss continued to fluctuate and progressively worsen, as shown in Figure 2. By the time B.B. was 45, thresholds in both ears were at the severe-to-profound hearing loss level, in the range of candidacy for a cochlear implant.

### Psychological/Emotional Impact of Hearing Loss

As a psychotherapist, B.B. considered it to be essential to hear accurately; consequently, the prospect that he might become deaf was frightening to him. At work, he developed compensatory communication strategies and made adjustments to his environment to facilitate communication. The emotional strain of having high listening demands and being extremely motivated to hear also prompted B.B. to become involved in activities associated with hearing loss. He

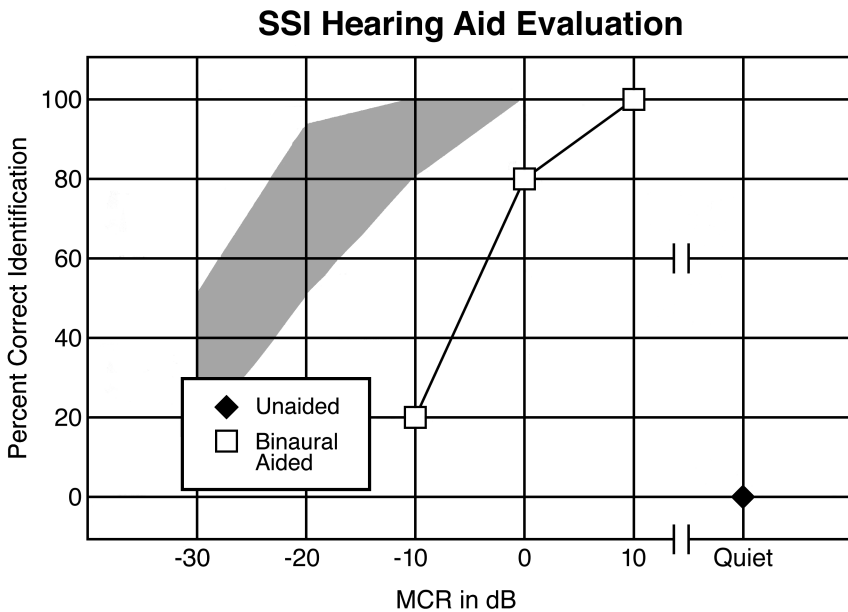


Figure 1. Aided speech recognition on the Synthetic Sentence Identification (SSI) test at three message-to-competition ratios (MCR) at the time when Client B.B. obtained his first binaural hearing aid fitting.

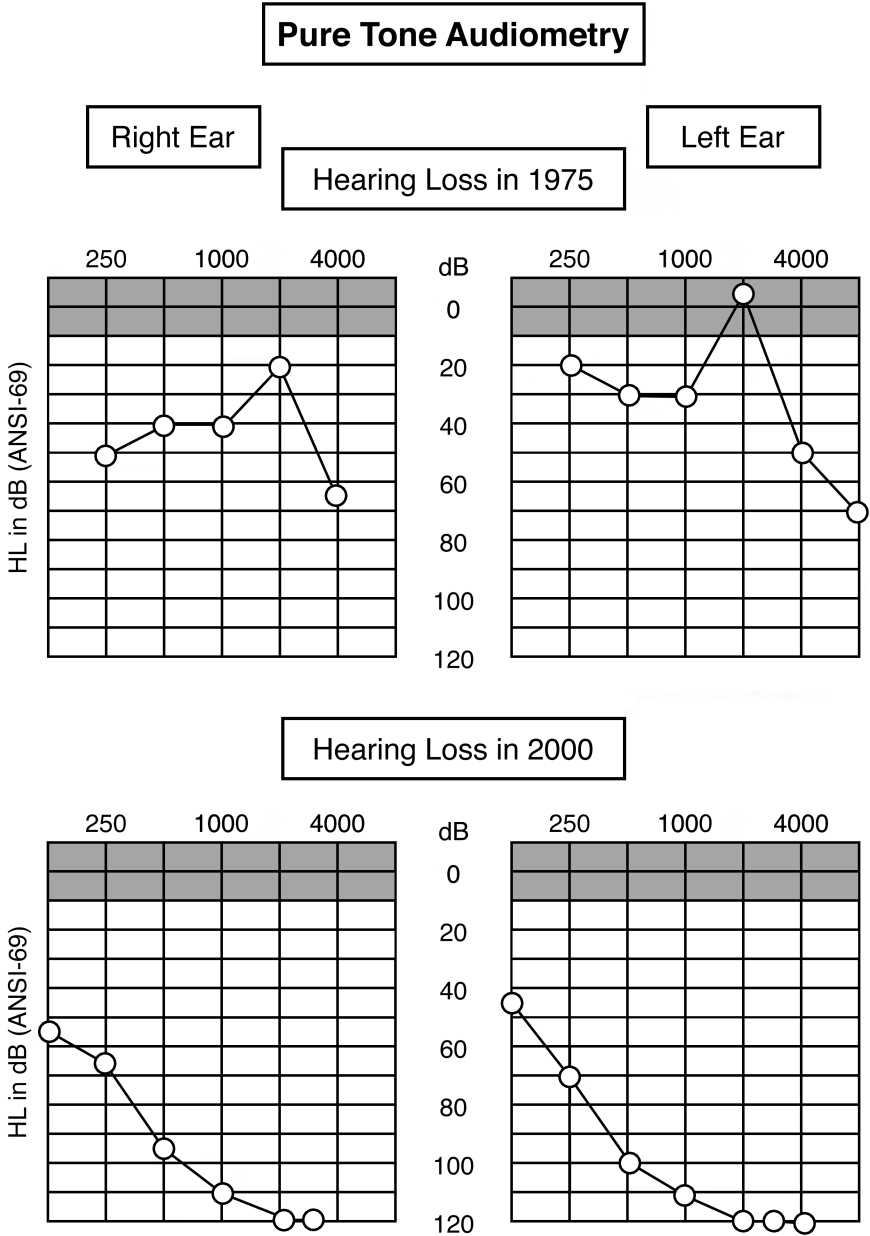


Figure 2. Pure-tone audiograms for Client B.B. illustrating the progression of his hearing loss.

attended meetings about the emotional impact of hearing loss, published articles on the topic, and provided group therapy to persons with hearing loss.

As B.B. became increasingly concerned about losing his remaining hearing, he sought input from physicians and audiologists and initially complied with their recommendations. He took medication to increase the blood flow to the inner ear, stopped smoking an occasional pipe, and participated in research projects that explored the latest hearing technologies. He was able to extend the period of useful hearing with a personal FM system and powerful transmitter in professional meetings and counseling sessions. He used amplified telephone handsets, a variety of specialized microphones, voice carry over (VCO) relay calling, and an infrared device for the TV. With each intervention, he would experience an emotional high in anticipation of a positive outcome, followed by disappointment at the short-lived effect. Despite his efforts, communication was progressively more difficult and he began to rely less on listening technologies and more on visual information. Over years of increasing hearing loss, it seemed to B.B. that he always remained outside the reach of every technological breakthrough.

Because B.B.'s greatest commitment and energies had been reserved for his work, he felt that his source of livelihood was being threatened. He had talked about, written about, and reflected on the problems associated with being a psychotherapist with significant hearing loss (Beck, 1987, 1989). At first, when he made presentations, he would feign adequate hearing. This resulted in embarrassment and defensiveness when he could not hear questions or comments from the audience. Later, he would playfully draw attention to his hearing loss, disarming the audience with humor, while aggressively emphasizing the handicap. Although acknowledging the severity and consequences of his hearing loss was emotionally painful, it was paradoxically a way to relieve painful feelings about it.

B.B.'s relationships were also affected. He withdrew from many interpersonal activities, was periodically anxious and irritable, and exhibited some depressive symptoms (Beck, 1992). He moved between the hard-of-hearing subculture and the professional hearing world of publishing journal articles related to hearing loss; yet, he did not feel fully at home in either world. Family relationships also became strained. Afternoon fatigue rendered it difficult for him to shore up the energy to maintain high quality communication at home. His school-aged children's efforts to communicate were hampered by the stresses that characterize families of hard-of-hearing people (Beck, 1991) and his marriage suffered from an inability to maintain the communication that fosters closeness in a family.

### **Issues of Anxiety-Related Resistance**

When B.B.'s hearing loss reached the candidacy range for a cochlear implant, he took no action to formally investigate the procedure for 10 years, despite the high level of communication demanded by his job and his great motivation to



function in a hearing world. Three audiologists spoke to him about cochlear implants at various times and gave him printed information. He read additional materials in various publications, visited cochlear implant booths at national meetings, and listened to personal accounts of successful implant experiences.

Some anxiety about the surgery was evident as B.B., who frequently visited his audiology clinic for hearing aid repairs, made jokes about “cutting open his head” and “getting ready for the knife.” Some of B.B.’s concerns were consistent with those of the 17 implant users studied by Hallberg and Ringdahl (2004) who extracted four explanatory concepts from their interviews. The three that mapped onto B.B.’s experiences were these: (a) “Preventing disappointment,” supported by low expectations and feelings of having nothing to lose; (b) “Waiting in silence,” accompanied by concerns about the outcome of surgery and a high level of emotion surrounding the switch-on; and (c) “Strengthening of self-worth,” which pertained to expectations of decreased dependency and increased social participation.

In retrospect, B.B.’s resistances encompassed both realistic and mythical fears and beliefs associated with the following thoughts and feelings:

1. *Fear and anxiety about the surgery.* Having never been a surgical patient, B.B. had pronounced anxieties about general anesthesia and “being cut on.” He was not comfortable addressing this issue with his audiologist.
2. *Anxiety that the procedure might fail.* B.B. understood that the procedure had a low failure rate. Still, the thought of emerging from the surgery no better off than before was daunting. The possibility that he could permanently lose all hearing frightened him.
3. *Fear about the impact on his work and livelihood.* Work was so important to B.B. that the prospect of no longer being able to function vocationally, if the procedure failed, was disturbing. He also feared the effect of facial nerve paralysis on his work, although he knew that the probability of paralysis was low.
4. *Unrealistic and inflated views of his hearing status.* B.B. believed that he wasn’t that bad off. He focused on the fact that he had some hearing (he was “not yet deaf”) and felt that he was getting by, though with difficulty. This view may have been supported by his increased reliance on visual and other non-auditory cues. Because he perceived his hearing to be relatively functional, it did not make sense to him to embark on a risky surgical procedure.
5. *Hopes for deliverance.* B.B.’s denial of the reality of his hearing loss led him to expect that somehow he would be delivered from his handicap. This magical thinking was a significant factor in sustaining his resistance.
6. *False beliefs about the implant device.* B.B. never carefully read the brochures he was given. He did not allow factual information to influence his beliefs, which paralyzed him. For example, he envisioned the trans-

mitting coil plugged into his head above the ear, requiring a stopper of sorts when the device was not in use. His anxiety about such an invasive appliance and its associated risks overwhelmed his senses and he could think no further.

7. *Concerns about the cosmetic appearance of the implant device.* B.B. was put off by the appearance of the implant's external transmitting coil, which looked to him like the logo of a bicycle wheel manufacturer. This concern about appearances persisted even though he had used hearing aids and FM systems for many years with little thought to how they looked.
8. *Vague uneasiness about the expense.* B.B. was unclear about the financial aspects of the procedure, although he did not pursue information about insurance coverage, which was likely to pay for the bulk of the expense.

### **Moving Toward Implant Candidacy and Surgery**

Those who practice psychotherapy often ask a new client, "Why now?" That is, given a history of long-standing signs and symptoms of difficulties, what ultimately moves an individual to seek help? For B.B., there were two sources of motivation. He, himself, had become increasingly intolerant of the frustrations caused by his impaired hearing. And his family and friends were pressing him to find a new solution to his communication problems, as all else had failed. His situation would not improve even with more exercise, dietary changes, medications, or the latest hearing technology. While advances in assistive listening devices had offered some benefit, none could extend his "hearing life" or prevent further progression of his hearing loss. It was a struggle to comprehend some clients now, even with an FM system. Work became as nightmarish as in the early days when he had attempted to deny his hearing loss and fake comprehension. He had already experienced feelings of loss when he was forced to stop using the telephone, abandon group psychotherapy, and decline invitations to participate in professional meetings. Now those feelings were snowballing.

Two specific experiences triggered B.B.'s ultimate decision to proceed with evaluation for implant candidacy. One was a personal account he read in an SHHH journal of the successful implant surgery of a 70-year-old retired dentist (McLaughlin, 2000). The other was a series of unsettling events with friends. These were people who had always shown understanding and acceptance of B.B.'s hearing loss, and were supportive of his struggles in adverse listening environments, so he had had minimal difficulty communicating with them. However, while they were on vacation together, B.B. realized that communication was now, at best, very problematic. To make matters worse, at the same time, he experienced an earmold problem and a hearing aid malfunction. He felt a sense of panic, as if on the brink of total auditory isolation. Upon returning from vacation, B.B. was moved to call his audiologist about an evaluation for a cochlear implant.

R.C.H. evaluated B.B. for cochlear implant candidacy with the formal proto-

col for the Nucleus 24 Contour Cochlear Implant System, investigational at the time. Criteria included severe-to-profound sensorineural hearing loss bilaterally and little or no benefit from hearing aids. Aided warble tone thresholds were obtained in the sound field with B.B. seated 1 m in front of the loudspeaker. Aided speech perception testing was conducted in the auditory-only condition using open-set sentences (Hearing In Noise Test [HINT] and City University of New York [CUNY]) and words (Consonant-Nucleus-Consonant [CNC]) recorded on compact disk for investigational sites participating in the Nucleus Contour Study (Boothroyd, Hanin, & Hnath, 1985; Nilsson, Soli, & Sullivan, 1994; Peterson & Lehiste, 1962).

HINT sentences were presented in three aided conditions: right ear, left ear, and binaural. CUNY sentences and CNC words were presented monaurally to the ear considered for implant surgery. All materials were delivered in a quiet listening condition at 70 dB SPL. CUNY sentences were also presented in the presence of multitalker babble coming from the same loudspeaker at a signal-to-noise ratio of +10 dB. Results were evaluated relative to the criterion of little or no benefit from hearing aid use, defined as a score of  $\leq 50\%$  on HINT sentences in the ear to be implanted and  $\leq 60\%$  in the best aided condition.

B.B. met all of the candidacy requirements for the Nucleus 24 Contour device. He demonstrated a severe-to-profound sensorineural hearing loss in both ears (see Figure 2). On HINT sentences, he scored 15% with the right ear aided, 2% with the left ear aided, and 12% with binaural aids. The prognosis for successful cochlear implant use was considered good for either ear due to the following factors: (a) postlingual onset of deafness, (b) consistent hearing aid and assistive device use, and (c) high motivation. The left ear was chosen for implant surgery based on B.B.'s preference to implant the poorer ear, his desire to continue to use a hearing aid in the better ear, and the slower progression of loss in the left ear.

Because B.B. completed the evaluation for candidacy and was scheduled for implant surgery all within a month, he had little time to dwell on his anxiety or raise any of the resistances that had been easily accessible. He expressed concern to friends and family, including his specific fears about the aftermath of the procedure. He responded to those who asked, "Aren't you excited?" that his "excitement" was tempered by increasing anxiety (there was in fact no sense of excitement). The anxiety was not relieved even when R.C.H., the nurse, and his doctor answered all of his questions. The feared outcomes ran through his thoughts and dreams and the surge of moving ahead was accompanied by intense apprehension, similar to the implant candidate described by Hattori et al. (2000) who tested in the neurotic region prior to surgery.

B.B. brought his anxiety with him the morning of the procedure in September of 2000 to have his left ear implanted after 26 years of progressive hearing loss. When he awakened from the anesthesia, he felt woozy and nauseated. The procedure, he was told, had gone smoothly. He hurt a bit, but the pain was tolerable,

and he was home by lunch the next day. He took a week off at home. On B.B.'s first day back at work, the resident removed the stitches and indicated that all looked okay. B.B. was relying on one ear, the residual hearing of the implanted ear now gone. It was not easy to communicate as he waited for hookup, a powerful reminder of the reason why he had chosen to go ahead with the surgery in the first place.

### **Implant Outcomes**

Two and a half weeks following surgery, B.B. returned to the audiology clinic for activation of the cochlear implant. That moment was spectacular and filled with emotion. R.C.H.'s voice sounded, in the client's words, like "Minnie Mouse on Dexedrine," but he could hear her!

Testing was performed postoperatively in the cochlear-implant-only condition 1 month and 3 months following device activation. A questionnaire that asked about use of and satisfaction with the device was also completed at these intervals. Figure 3 shows pre-implant and post-implant sound field thresholds. Pre-operatively, with hearing aids, B.B. was only able to detect some low-frequency sound in the range of normal conversational speech. When evaluated 1 month after receiving the cochlear implant, he could detect most of the sounds of speech at conversational levels, consistent with expectations.

Table 1 shows B.B.'s speech test scores before and after receiving the cochlear implant. Also shown for comparison are mean scores for 56 study clients who received the Nucleus Contour device (Parkinson et al., 2002). B.B. demonstrated rapid and remarkable improvement. After only 1 month of implant use, he scored over 90% on HINT and CUNY sentences in quiet, compared to preoperative scores of 2% and 25% on these two tests, respectively. After 3 months, his CUNY sentence score in noise was 83% better than the pre-implant score. By contrast, after 1 month, average sentence recognition scores for the implant study group increased 50%-59% in quiet and 40% in noise compared to their average pre-implant scores. B.B.'s word recognition score also improved, jumping 40% after 1 month and 60% after 3 months. In summary, although mean scores of Nucleus Contour system users showed substantial change in auditory speech recognition after just 1 month of cochlear implant use, B.B.'s scores demonstrated extraordinary performance over the same period. Not surprisingly, B.B. reported high satisfaction with his cochlear implant on the client questionnaire, and indicated that he would certainly recommend an implant to other persons with severe-to-profound hearing loss.

During the first few weeks, B.B. had many questions for his audiologist. One concern pertained to his hearing aid, which he continued to wear in the ear opposite the implant. He thought the hearing aid might not be working, but it was found to be functioning properly. Suddenly, B.B.'s performance in his "good" hearing aid ear (15% on HINT sentences in quiet) paled compared to his very

**SOUNDFIELD AUDIOGRAM**

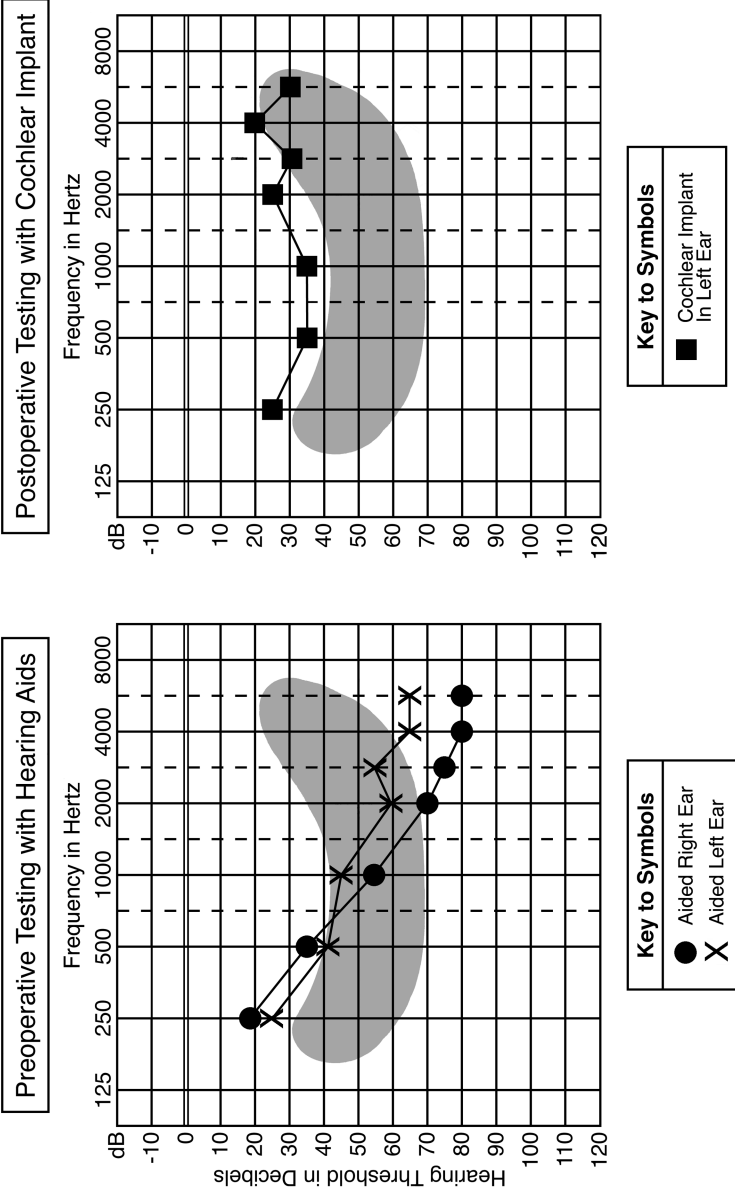


Figure 3. Warble-tone thresholds obtained by Client B.B. in the sound field with hearing aids prior to cochlear implant surgery and postoperatively with a Nucleus 24 Contour device.

**Table 1**  
 Aided Speech Reception Scores in the Left Ear of Client B.B. Before (With Hearing Aid) and After Receiving a Cochlear Implant (CI) in That Ear, Compared to 56 Users of the Nucleus Contour CI

Test stimuli	Condition	Client B.B.			Comparison group means <sup>a</sup>		
		Before CI	1 Month post-CI	3 Months post-CI	Before CI	1 Month post-CI	3 Months post CI
HINT sentences	Quiet	2%	93%	94%	6%	56%	63%
CUNY sentences	Quiet	25%	98%	96%	11%	70%	78%
	Noise	10%	90%	93%	4%	48%	59%
CNC words	Quiet	6%	46%	66%	4%	30%	38%

*Note.* HINT = Hearing in Noise Test. CUNY = City University of New York. CNC = Consonant-Nucleus-Consonant.

<sup>a</sup>n = 56

good speech recognition in the implanted ear. Within 1 month following activation of the cochlear implant, B.B. was able to use the telephone to talk to his clients, even those who were having severe crises, without use of a relay service or his secretary's support. He had not been able to do this for many years.

## DISCUSSION

B.B. had been a relatively compliant and responsive client, seemingly embracing most new technologies, and even participating in various experimental trials; so it was puzzling why he became avoidant and not responsive specifically to the recommendation for a cochlear implant. Despite variability in performance, a high proportion of postlingually deafened adults who received an implant have been reported to express a high degree of satisfaction with the device, experienced an improvement in their quality of life, and definitely would recommend an implant to a deaf friend (Djalilian, King, Smith, & Levine, 2002; Faber & Grontved, 2000; Francis, Chee, Yeagle, Cheng, & Niparko, 2002; Parkinson et al., 2002). Given the high likelihood of positive outcome from a cochlear implant for postlingually deaf adults, audiologists may not anticipate the level of anxiety that some clients experience. In retrospect, B.B.'s hesitation could be viewed as a product of the psychological and emotional obstacles noted in the case report. B.B.'s fears and beliefs created a context of distortions through which he processed information from several audiologists regarding the procedure. His resistance was further supported by an inability to adequately address the anxieties that arose from those distortions.

While it is not within the scope of practice of audiology to assess or treat the resistances presented by a client such as B.B. (American Speech-Language-Hearing Association [ASHA], 2004), the audiologist might help a client recognize the emotions associated with hearing loss or an intervention such as implant surgery. Danermark (1998), emphasizing the emotional response to hearing impairment, recommended bringing into the open emotions such as shame and embarrassment, which can arise from fear of losing face. The process of acknowledging these emotions allows them to be "discharged." Roberts and Bryant (1988) described how an audiologist can use the linguistic approach, listening to the words used by a client to represent experiences, especially those which reflect inappropriate coping strategies, and then challenging distortions in order to clarify issues. This process allows the client to consider options for change.

As emphasized in the SHHH survey findings of Wendt-Harris et al. (2001), what clients seek from audiologists is more than an evaluation and fitting for a hearing aid. They look for their audiologist to acknowledge and understand the problems they encounter in everyday listening situations and they want help to manage these problems. B.B.'s anxiety was not acknowledged directly by either him or his audiologists. Realizing that B.B. was avoiding serious consideration of an implant, an audiologist might have gently met his anxiety with an empa-

thetic ear, hearing him out, while presenting a straightforward challenge to his fears and beliefs. R.C.H. could also have conveyed to B.B. her awareness that he was pushing the team away with his playful yet determined avoidance. Through the process of discussing anxieties, clients can let go of distorted expectations and fears like those that so encumbered B.B. for the many years that he was a candidate for an implant. For some clients, it is also valuable to arrange a visit with a clinical social worker, psychologist, or psychiatrist trained specifically to assess emotional readiness for the implant procedure. Even B.B., who was well informed and trained as a clinical social worker, had need of professional consultation to evaluate his emotional barriers to pursuing a cochlear implant. It would have been inappropriate to assume that he would readily seek psychological counseling services on his own initiative. Reaching out to a client's family might further help to clear the roadblocks of resistance. During assessment, family encouragement and involvement in the process can go far in alleviating client anxiety. The contribution of family support toward a positive outcome should not be underestimated.

Written materials are also useful in dealing directly with anxieties and myths about cochlear implants that come to light during client-audiologist interchanges. These materials would go beyond the typical information about implants. They can be provided during a routine clinic visit or the especially critical period of evaluation for implant candidacy. Although clinicians may provide a wealth of general information about the cochlear implant device, follow-up procedures, and typical outcomes, research indicates that general information may not change behavior, even in cases of life-threatening chronic disease (Israel et al., 1996; Mazzuca, 1982). It is expected that a more successful approach is one that focuses on a specific client's unique needs.

Use of the print medium is also a minimally intrusive approach for specifically addressing resistance. A question-answer format might treat issues anticipated by the implant team and provide information related to any misguided or misunderstood expectations of the client. Content might be centered on topics such as:

- Myths associated with cochlear implants and implant surgery
- Typical fears about the procedure
- How to express and deal with anxiety related to the implant

Additionally, the material might encourage a client who feels overwhelmed by the prospects of receiving an implant to seek professional help regarding anxieties, fears, and other concerns. The client can be reassured that feelings of anxiety are normal but, in some instances, can interfere with readiness to proceed. It is essential that the implant team not use this material as a vehicle for pressuring an individual to consent, but rather to further educate the client.

We suggest that implant candidates who resist exploring an implant recommendation would benefit greatly from invitations to express their anxieties, ex-



pectations, and fears. This case study is an example of the powerful influence of client attitudes and motivations on rehabilitative outcome, as has been shown for a variety of chronic illnesses (Ryan, 1992). To our knowledge, there are no data available on the number of eligible clients who opt not to pursue a cochlear implant, or the reasons behind their decisions. According to Ryan, behavioral change and compliance with treatment are so much more a function of one's personal and social characteristics, than the seriousness of a physical condition, that it can be difficult to effect behavioral change even in cases of illness that threatens to reduce life expectancy. With this in mind, audiologists may begin to understand the challenge of facilitating positive change in clients who are resistant to audiologic recommendations for intervention. Research would be valuable to ascertain the extent to which this example case is not an isolated incident. Further study would then be needed to demonstrate positive outcomes from aural rehabilitation counseling tailored to specific client anxieties, which would further support the attainment of third-party reimbursement coverage for such vital counseling services.

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