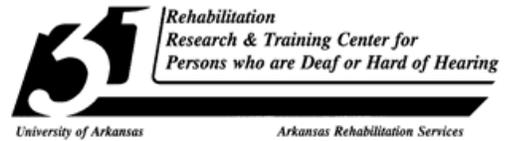




## Selected Proceedings of ALDAcon 2005



### **AURAL REHAB**

Presenter: EDIE GIBSON

**EDIE GIBSON:** My husband asked me when I was preparing this presentation, why would Advanced Bionics send you to talk about aural rehabilitation? I mean we are a device manufacturing company, so why would they want people to know about aural rehab, and not just talk about devices? Well, there are many reasons, and one is that Advanced Bionics has a strong philosophy that our goal is to take away the technological limitations to hearing. When you think about hearing, there are three things to consider. One is patient variables that might differ per person, two is the technology, and those together come up with your potential for success. And if we take out that technology, then we're left with the individual characteristics of each person. So, as Advanced Bionics continues to improve our technology, it's time to start focusing on the next goal of helping people hear better, which is improving your skills as an individual.

I want to talk just briefly about some factors that can change, or that may be different from person to person, and can affect how a person does with an implant, or with hearing aids. There are several individual factors here. When we think about someone's "success" with oral communication, one thing we might talk about is the duration of deafness. The next factor that can definitely effect how you're able to communicate with your hearing is how much hearing did you have before you became profound.

Another big one on here is length of time without auditory stimulation. When you have hearing loss, how long did you go before stimulating your hearing nerve? Were you one of these people who waited to get hearing aids, and waited and waited and waited, and that nerve wasn't really stimulated as much as it was? Or were you a person who aggressively sought auditory stimulation right when you began to have a problem?

The last one is aural language memory. If you've heard before you became profoundly deaf, and you have knowledge of how speech sounds, then with an implant or with hearing aids you, statistically speaking, will have an easier time if you know what speech sounds like, than those who have never heard before. However, there's no

magic formula. You can be someone who didn't have any hearing at all when you were born and didn't know how to talk at all until you were five years old, even, got an implant later in life, and still do very successfully. Or you could be someone who quickly loses their hearing, gets an implant, and is not able to communicate as easily as you would like. Though these are general factors about why someone may do better than another person, they're not steadfast, rock rules.

So, now that I've told you how you might be limited in your ability to develop aural skills, let's talk about what you can do to maximize your aural skills. There are two big things on here. One is using amplification; the second thing is actually going through therapy, having aural rehabilitation and practicing. So aural rehabilitation, that's what this is mainly about, and I thought I'd throw up this official big word definition of aural rehabilitation. But in this whole definition, there is one word that stands out as important to me, and it's communication. I think aural rehab is the process of improving your communication, period. No matter what big words they use to say that. I also wanted to throw out some other words that you may have heard that aural rehabilitation is basically the same as aural rehab, AR, auditory training, listening therapy, speech therapy, listening practice, audiological rehabilitation, auditory-verbal therapy, or AVT. These are just kind of different labels that might be put on a general topic that we're talking about, learning how to improve your listening skills. Why would you do AR? Why is it important? There are three basic reasons, and the first one is neurological plasticity theory. Basically, it means neural, your brain, it's plastic, it is able to be molded into different shapes, and to different forms. Even though we're not babies any more, our brains can still learn new tasks. So we can paraphrase this with saying you can teach old dogs new tricks. Even though your brain may not have heard very well in the past, with practice it can change to learn to hear better. We have plastic brains. That's one reason it's important to consider doing AR. The other is that through practice, we can begin to have imprinting of auditory memory. Auditory memory is when you have knowledge of what's being said.

Here's an example. You are driving under the golden arches. Up to the drive-in window, you roll down your window. A voice comes over the speaker and says (muscle), "Welcome to McDonald's, what can I get you today?" You know I was saying welcome, what can I get you? Even though you could not understand every word that was there, you knew what was happening in that situation. You had auditory memory—Knowing what's being said, and being able to fill in some of those gaps. Through AR, you can increase your auditory memory and know what's being said. The last one is familiarity and comfort. This is something else that you can learn through AR. Through aural rehabilitation, you can learn how to adjust your environment, adjust yourself, so that situations are more familiar and comfortable to you, to improve your listening.

Who needs aural rehabilitation? If you're one of these people who picked up the phone and called your mother two days after receiving your cochlear implant, are you someone who could use aural rehabilitation? I say yes. No matter where you are, you can always go up.

There are two ways to focus on listening. One is training with a professional; we're going to look at that first. If you go to a professional then most likely it's going to be one on one. Sometimes it is small groups where you come together. You might meet just one or two times, and focus on a specific skill, like, say, learning to talk, or hear better on the telephone. Or you may meet repeatedly and work on your skills on an ongoing basis.

Meeting with a professional is one thing, if you haven't done in the past, you might want to consider. How do you know a good therapist? Who would be qualified to do therapy with you? Maybe I'm interested in looking into having some therapy and I know who to look for, but how am I going to pay for this? And because Medicare will pay, many insurance companies follow that example and they will also pay. I would encourage you to talk to your therapist or to whom ever you find about can we bill my insurance company for this?

You say, "Maybe with a therapist might be nice but I live in the middle of Idaho, there's no therapists near me. What can I do to improve myself?" We're going to real quickly go through creating your own program. This is what I would like all of you to be able to walk away with, to say, even if you don't come up with a formal structured program, that you have some ideas just in your everyday listening that can help you focus and improve your hearing.

The first thing you have to do is to understand the stages of auditory development. This is kind of technical stuff, so hang in with me. Probably the best example is those who have implants, because they're almost like babies again, with new ears when you first get your implant. Do you remember the very first thing when you started off with your implant, the very first thing people wanted to know is, can you hear anything? Your audiologist probably said something like, ba-ba-ba. Can you detect sound? Do you know it's there at all? Next, we want to know can you discriminate? Do you know someone's talking to you, versus the washing machine is going? Two very different sounds but in the early days it's hard to tell those sounds apart. And through time you begin to learn, okay, this is a voice, this is something else: Identification. Now you know, this is a voice. Is this my husband's voice, or my baby daughter's voice? Which voice is this? I want to identify the source, here. And then the last step to understanding is comprehension, understanding what that person says. Unfortunately, we want the last step to be instant, right? When you start over with your listening therapy I just want you to remember these stages, and not to be frustrated if you don't hit discrimination day one. It can take years to go through the different stages.

How do you know which stage you're at? One is just by understanding the different stages, and by kind of doing some self-assessment. Asking yourself, if a sound has occurred in my environment, can I detect it? Is that something I can do, yes or no? If you say yes, I know generally when sounds occur, then you got level one. If you say, okay, I can tell something's there, can I tell two different sounds apart? Now, if you can

tell the sounds apart, do you know what the sound is? Can you tell this is a person talking? Can you identify that sound?

There are some tests that we mainly do with children, but your audiologist or speech pathologist may do this with you to see. There is a basic, can you detect, discriminate, or identify? It probably starts with someone covering their mouth, or holding up a big black circle and saying a specific sound. Let's say you were able to do this. If we were to say the next level, can you identify and comprehend? Can you understand? That's really identification. The last one would be comprehension. If someone walks up to you out of the blue and says a random sentence, can you understand it?

Just in general, people go through these different stages. We all know the person who comprehended after having their implant for two days. We all know the person who has used their implant for several years and is still having difficulty identifying. And that's fine. People are going to progress at their own rate. It's hard to compare yourself with others; you should never do it. But the last one is important. It's never too late to practice. Keep working on developing those skills.

Now, you all know where you are, and you're saying okay, well I'm ready. I kind of have an idea of what skill I need to work on next. How do I do that? We're going to look at pre-made programs and materials. In general, I've divided these into three groups, free resources, audio books, and the third would be professional materials that you buy.

Just some free ideas for you to think about when you're going around, focusing on listening. One would be a listening scavenger hunt. You're walking around your neighborhood listening. What is that? You could even make this more of an activity of having someone say "I hear something loud." and you have to try to listen and guess what it is. Just like remember that game I spy, when you were a kid? You could have someone in your family write down a list of sounds within the house, and you have to go around and find where those sounds are happening. If they write down "radio" which of your clock radios is on? And you have to go around and find that. Come up with fun ideas for you to look for sound, a free scavenger hunt.

20 questions is good. I'm going to sit here and ask you 20 questions about when you were in high school. You know that's the topic and my first question is, I want you to focus on your listening (covered mouth) when did you graduate? Come up with activities like that.

**AUDIENCE MEMBER:** I know there's a lot of people who have cochlear implants. I don't. I was turned down, actually. And would you think these exercises would be applicable to someone who's hard of hearing, as well?

**EDIE GIBSON:** Even without a cochlear implant, or even if you've had a cochlear implant for years, I would still say you can always improve every step.

**AUDIENCE MEMBER:** When someone reads something to me, I would rather read.

**EDIE GIBSON:** When someone else is reading aloud, it's much easier to follow along visually. The challenge for you is to say to yourself, I know that is hard, I'm going to work on specific times on listening, and maybe that's not all the time. That's not when you're meeting with your boss and having your very important annual review is not the time to say, "I'm going to focus on my listening today." It is when you're in a comfortable environment, with your family, when you're reading the morning paper and you're both sitting there with a copy, that might be a time that you say, it's all right if I miss a word or two.

**AUDIENCE MEMBER:** I lost my hearing over years and you lip read automatically almost. So one thing that I still want to do is lip read everything. I've had my cochlear for about two and a half years, and I still want to just depend on the lip reading

**EDIE GIBSON:** I think that knowledge of saying, all right, this is something I'm going to focus on, again not at an important time, not at a stressful time, but just at a time when you're comfortable and with other people, that it might be okay if you have to ask a question a couple of times to clarify.

**AUDIENCE MEMBER:** I've had a CI since last November, and I thought it was going to be more perfect than it is. It's good. I'm glad I have it. But I use closed captioning all the time, and I'm dependent on what I see. But one thing I do do, is sometimes, if I'm watching a movie and it's not captioned, I sit on the floor in front of my TV and watch the whole movie. I do that to practice my listening. That helps me. I don't know how much, but I think it does help me.

**EDIE GIBSON:** We all hope to have perfect, ideal communication. But that didn't happen, and so she is doing the right thing of still using her visual communication, her assistive listening devices, she continues to use these things to help her hearing, but in the meantime she's also focusing on improving her listening by watching television and doing some lip reading and trying to coordinate, focus on her listening without the closed caption.

**AUDIENCE MEMBER:** I'd like to say I've had a profound hearing loss for most of my life, and I've had a CI now for almost two years and I'm having a bad time. Part of the reason is that as a severely profoundly hearing loss person, I had wonderful lip reading skills, and I depended on what I saw to understand what I heard. With this, if I don't see it, my mind is still blanking out what I don't use and I become aware of it. I could be sitting here in a noisy restaurant and I'll hear people over here perfectly and I'm struggling to understand the person I want to talk to. I think that's the biggest thing. We're used to seeing what we hear. We're not used to hearing and knowing what we hear. It's very difficult.

**EDIE GIBSON:** Being aware of what your challenges are, and then celebrating the small victories, that is very important, too.

I think audio books are an easy get away for professionals to give you. When you go in and say "I need to focus on my hearing," they say get some books on tape. Right? Audio books can be a great thing. But you have to know where to start. And starting at the beginning, with a very basic children's book that has words written down for you to follow, that does not have a lot of twinkle twinkle music in the background, is a great place to start. You can find such a cassette and book in children's libraries. A children's librarian is a great place to start. You know the resources, can you please recommend a book for me, maybe even you want to be specific, I understand male voices more than female voices. Or maybe you want to challenge yourself. I understand male voices; do you have one with a female voice? So going in and asking them very specifically, this is what I want to focus on, can you help me find this book? Once that's a breeze you can follow along all these children's books, you put the book away, now can you listen to a children's story without the book?

Some might start with "Charlotte's Web", some with "Bearensain Bears Go to the Park." Once you get more confident, you go on, eventually listening to books that aren't even in print. I had a wife call a couple of weeks ago. Her husband was in a tragic car accident, just all these complications, he had been implanted but they only got five electrodes in. Basically, he's just barely understanding if speech is happening or if it's an environmental sound. He's in those early stages. And his speech therapist had him listening every day for three hours to adult books on tape with no visuals in front of him. Three hours, every day. And this wife was so frustrated. You can understand why. So books on tape are great, but you have to know how to use them for yourself.

Just real quickly wanted to look at how to listen to audio books. I think it's good that they would be as clear as possible, so if you have a CD version versus a cassette version, that's good. And just how to connect. You can either just put it in and play it over your stereo system or you can directly connect. And if you don't know how to directly connect, talk to your audiologist.

**AUDIENCE MEMBER:** I'm a new user, month and a half. Is there a difference in learning between just conversation, talk, acoustic sound, and something on tape or radio?

**EDIE GIBSON:** Yes, there is. The better the recording, the better the quality of the CD versus a tape, the less of a difference there will be. But if you're listening to am radio, it's probably not a good place to start your listening training. As the brain learns to hear in a challenging situation, like a recorded situation, then it will do even better in an easier situation like talking to a person one on one.

Since the cochlear implant switches things to a digital way, if you listen to a production that's digital does it make sense that it would be easier for you implant to understand it?

I don't think so. I'm not an acoustical engineer, but I would guess the moment the digital information comes out of the speaker it's acoustic. So at that point, it doesn't matter. However, the digital is probably a clearer sound than the non-digital, and that may be why you find it easier, because it's a clearer quality of sound in general.

There are other materials that you can purchase. These are ones that advanced bionics comes up with, or are coming out with. The first one is making the connection, and then hearing your life. The others are for children, you don't have to worry about those.

“Making the Connection” is due out this fall, and we are very excited about it. Mary Koch is an excellent auditory therapist who has come up with many, many exercises. The book starts with very basic skills, such as types of sounds. It plays a sound and then you mark down, was that sound a voice? An environmental sound? Or music? This is where it starts. Some of you may not need to start here. You may be advanced more than that. But others of you, this would be a play to start. I hope as soon as I start talking about this you are thinking back to the beginning of the presentation when we were talking about basic detection and discrimination. We talked about can you discriminate sounds, can you discriminate the voice from the dish washer? This is where the book starts, right there with discrimination. Can you tell, is it music? Is it environmental? Is it voice? Not what are they saying? Not what music is it? Can you tell which of these sounds it is? So it starts with very basic and builds from there. After you completed your form, you would go look at the answer sheet and see if you did correctly. This is all in the manual. You would start in the beginning and build up. Wherever you are stuck, that's where you would know to focus.

The next one is “Hearing Your Life.” This was developed at House Ear Institute and this same system is the cast system, it's also been put out by Cochlear Corporation and it's called “Sound and Beyond”. I think it's about \$250. It's also a wonderful system. It goes through the different levels of auditory training. It also goes through progressive training. It's a very similar system to making the connection. Just two different programs.

I just wanted to mention some other professionally-produced materials. Hear Again Publishing. They have a file called “Learning to Hear Again”, and then “Learning to Hear Again with your Cochlear Implant”. This is a book that's really meant for like a leader to go through with a small group, but you could follow along and do the exercises yourself. It's about \$50. There are two versions, one is just learning to hear again and the other is specific for implants. So very good materials. Ask your audiologist or your speech pathologist at your clinic, they may have handouts that they can give to you. Some other types of resources are good, some of them free.

**AUDIENCE MEMBER:** I can't imagine why someone would want to force themselves to give up lip reading. I think it's a very natural part of the retention process.

**EDIE GIBSON:** I am very glad you said that and I don't see how you could, even if you wanted to. However, if there were specific times that you focused on not lip reading, during comfortable times, then you could strengthen your auditory skills so when you're in those situations that you don't have lip reading, you feel more comfortable. I think that's a very important point.

**AUDIENCE MEMBER:** I mean there are just things that you can't get by lip-reading. And if you don't train yourself, you're never going to get it.

**EDIE GIBSON:** Right. You don't have to lose lip reading by any means, or your other devices. Some things you can do to make it more fun. Do it with a group. Make that part of your ALDA group that you're all going to get together 30 minutes earlier and do a listening activity. Join with others to hire a speech pathologist to have a session with you. Engage your family in this. Make it fun for yourself. Start with practice at your current level. What is comfortable for you to do? And then how can you make that a challenge.

Here are just briefly some ideas. When you're ready to make it harder, think about it. For example, if you understand the movie with the closed captioning on, if you turned off the closed captioning, could you still get it? Now, you understand the movie in your home environment with your great headphones. Go to the movie theater and listen there. Try to think for yourself, here's what I'm doing now, how can I make this harder on myself?

Other challenges you might have. You're doing well in quiet. Well let's throw in some background noise. If you can hear that book on tape just fine, hop on the treadmill with it. Let's make it harder. What can you do to make this task harder for yourself? If you understand a book on tape, or a book when your spouse is reading it to you, choose a book on tape with another person speaking. Oh, you can get that? Throw in a British accent. See if you can get it now. Always be thinking: How can I make this a little bit harder?

The important thing is to start with where you feel comfortable. You all know what's tough for you. This is not about how to make your life harder, but how do you start where you are and slowly build skills?

Where can you look for support? One place you can look for support is where I work, which is the BEA at Advanced Bionics. We are a team, and there are many ways to e-mail us, even if you don't have our device or don't want to use an implant, or are not an implant candidate, we will still be glad to refer you to support groups in your area, which you already know, how to use, and other resources.

**AUDIENCE MEMBER:** Is it too late for me after ten years?

**EDIE GIBSON:** Is it too late to start anything at any age? I would say never. Just start right at the beginning and go slow. If you start too challenging, you're going to get frustrated. And if you start too easy, you're going to get bored. Think about where you are and how to make that challenging.

Dr. Gibson received her Master's of Science in Audiology from Gallaudet in 1998 and began working in Georgia. While working with hearing aid and cochlear implant users, she continued her education and received an Audiological Doctorate from the University of Florida in 2000. Dr. Gibson joined Advanced Bionics in early 2005 as part of the Bionic Ear Associate, Consumer Division, where she supports cochlear implant candidates and users. She lives in Atlanta with her husband, two-year-old daughter and 2 dogs.