

Entering first grade, I was diagnosed with very mild bilateral hearing loss. An ear, nose, and throat (ENT) physician said that I had inherited a gene that would cause my hearing loss to progress until I reached middle-age.

In my late twenties I could not always localize sounds, because my hearing loss was greater in my left ear than my right. I lost stereophonic hearing. With my right (unaided) ear I used amplified telephones, but with decreasing ease.

At age 41, I got a hearing aid for my right ear and a caption decoder for my television. Gradually, I stopped going to movies since I could not lipread much of the dialogue.

At age 59 I graduated from amplified telephones to text telephones (TTY). I knew my slide into profound deafness had become complete when I could no longer successfully use an FM system with a small group of friends at a meal in a home with no background noises (historically, ideal listening for me).

First Stop: My First Cochlear Implant

At the Cochlear Implant Program, University of South Carolina Speech and Hearing Center, I was given a battery of audiological and speech tests, a test for senile dementia and an in-depth interview. I qualified clinically and psychologically for a cochlear implant.

The five weeks between surgery and activation were the longest in my life. On activation day I could not differentiate between male and female voices—all sounded robotic. By the next day I began detecting gender difference in voices. By week's end, I was hearing birds singing and the turn signal blinking in my car. My biggest thrill was hearing the purrs of my cat for the first time.

Speech Therapy

To regain speech recognition, I listened to audio books, following along on the printed page. I chose both male and female readers, with different regional and ethnic accents. Diversity was vital. I have some trou-

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ble hearing higher-pitched frequencies typical of many women's voices. My case may be unusual, since Mark Ross, Ph.D., reports the opposite situation. (“Reflections on My Cochlear Implant,” *Hearing Loss Magazine*, July/August 2007).

Not every Cochlear Implant Program offers speech therapy. I feel lucky mine did. The week after my first activation, I started group and individual speech therapy.

In group therapy, other cochlear implant recipients and I listened in a group environment and shared information about our experiences. I was comforted knowing that I was not alone. Sometimes we played “word Bingo.” When one of the participants let me make a test call over her cell phone, I found hope that I could someday learn to use one.

Individual therapy occurred weekly. I worked on recognizing in-room speech with and without background noises. I learned to identify and ignore irrelevant sounds. A variety of purposeful word lists was used. Two weeks after my first activation, my test scores reached the 80 percent mark.

Because I had developed “telephone fear,” I crucially needed a good first post-surgery telephone experi-

ence. When the audiologist activated my processor's telecoils, I was ready to begin. I bought a hearing-aid compatible M4 and T4 rated cell phone. Although some cochlear implant recipients do not find the telecoil necessary to hear telephone speech, I found it essential. At home, I practiced by having someone giving me word lists (from my therapist) during cell phone calls. My scores ranged between 60 percent and 90 percent accuracy, and started to climb!

I was so encouraged by these results that I wondered whether a second cochlear implant might give me a sharper edge in the hearing world.

The Road to Decision: To Get or Not to Get?

I researched bilateral cochlear implants using Google. Also, I studied the program book of the Eleventh International Conference on Cochlear Implants in Children (Charlotte, North Carolina, April 2007) believing new findings might also apply to adults. I had three basic questions.

First, how long must I wait to recover from my first cochlear implant before a second? To date, I can't find a firm answer in the scientific literature, there may be one, I just haven't heard about it. However, I had made a full physical recovery and excellent progress in speech therapy by one month after activation of my first cochlear implant. My insurance would pay for the second surgery, audiology, and therapy. My surgeon approved my request for a second cochlear implant.

I asked myself what are potential additional benefits from a second

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For More About Cochlear Implants

www.hearingloss.org

Click on Learn, then Technology, then Cochlear Implants.

Includes articles by Mark Ross, Ph.D., referenced in Nan Johnson's article; personal stories about cochlear implants; a recent webcast text from the Northwestern Memorial Hospital that gives a thorough look at what is involved in the implant process; and other helpful articles.

Remember, our articles are not substitutes for seeking medical advice or care from your own doctor and hearing health professional. That is how you get the most appropriate advice for yourself.

Going Bilateral

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cochlear implant? One study found adults with two cochlear implants better able to localize sounds and to discriminate speech in both noisy and quiet places. "Head shadow" is one reason, because it lets you hear sounds at softer volume in the ear opposite the sound's source and lets you separate signals from noises (Peters, 2006).

Should I wait for future medical breakthroughs? Implantation of embryonic stem cells has allowed chickens, pigs, and dolphins to reproduce naturally the hair-like cells (cilia) in the inner ear that stimulate the auditory nerve. However, more research is needed to see whether the implantation of human embryonic stem cells will allow people to benefit in the same way.

Since 2000, there has been a technological revolution in cochlear implants. Current cochlear devices have an external processor paired with an internal receiver. Technological advances may eliminate the external part. Also, a future design may include one internal bilateral device to serve both ears.

Research is underway on a cochlear implant that is a ribbon-film with 128 electrodes instead of the current 22. The larger the number of electrodes, the broader is the frequency range recoverable by the cochlear implant recipient. This ribbon-film device is currently being tested on animals. It may become available for humans in four or five years.

I decided not to wait for uncertain future breakthroughs in medical science. My second cochlear implant occurred almost three months after my first.

The Journey Back to Stereophonic Hearing

At my second activation, I was surprised that my "newer" ear immediately began distinguishing male from female voices. Crossover of signals from my "older" ear through the brain stem to my newer ear is the likely reason.

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I immediately began to detect the direction of sounds accurately (unlike Mark Ross, 2007). At first, the sound quality in my newer ear was robotic with "breaks" along the bandwidth. Therefore, gaining complex skills has been slower in my newer ear.

To prevent my older ear from becoming permanently dominant, I performed many at-home and at-clinic exercises, using audio books and word lists, with only my newer processor turned on. My newer ear has regained the ability to distinguish individual words after 30 silent years.

I spent about half of my individual therapy sessions in the development of telephone skills. I listened to word lists at the clinic over landline and cell phones. Several friends of both genders took turns providing me with daily word drills via cell phone. Thus I listened to a variety of voices and did not overburden any one friend. I have developed greater acuity over my (digital) cell phone than over the (analog) landline phone: both my cell phone and the external processor of my cochlear implant are digital. An audio loop gives me the significant advantage of hearing over my cell phone with both ears.

Going Bilateral: The Relevance for Others?

In my research I found there are at least two major financial hurdles to bilateral cochlear implants. First, many people are uninsured. Second, a health insurance policy may not pay for any cochlear implant surgery or may cover only one implant.

As far as I could find in my 2007 research, American insurers do not uniformly have current information on the benefits of bilateral implantation or on their legal obligations to provide payments for two cochlear implants. Encouragingly, scores of Fortune 500 companies now provide their employees with health insurance policies that will cover bilateral cochlear implantation. Much work remains to assure bilateral cochlear implantation as part of standard health insurance coverage. Based on firsthand experience, I value and recommend availability of two cochlear implants for people who are severely-to-profoundly deaf plus speech therapy as a routine part of post-surgery rehabilitation. ■■■■

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The Benefits of Bilateral Implantation

How Bilateral Amplification with Cochlear Implants is Gaining Momentum and How a Team Approach is Crucial

By Wendy Potts and Jamy C. Archer

Making the decision for bilateral implantation is not easy, but the cochlear implant team can provide the expertise, support, and counseling necessary to guide the recipient through the process. Bilateral implantation can provide multiple benefits including (but not limited to) increased ability to localize sound, a reportedly more natural sound quality, and better speech understanding in noise. The team is essential to realizing those gains.

The audiologist balances the maps from both devices to provide the recipient with appropriate input from each side. Usually bilateral cochlear implants are not simultaneous but sequentially implanted. Therefore, the sound from each ear can vary greatly. Balancing the maps can pair the different inputs and make it sound more natural.

The speech-language pathologist provides therapy to each implant individually as well as together. This approach decreases the recipient's reliance on the first implant and provides more balanced speech understanding. It is important to remember that as it took time to assimilate to the initial implant it will also take time to adjust to the second.

However, both devices together will eventually provide a more natural and clearer understanding of speech than a single device alone.

With natural hearing, people can discriminate speech out of each ear independently, but it is better when the ears work together. This is our ultimate goal with bilateral implantation and the team approach. Nature meant for ears to work together and bilateral implantation is the closest artificial "nature" we can provide. ■■■

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By Mike Penn



The Lighter Side

Comic Relief in a Silent World

Please send your funny stories to Mike Penn at mkp2000@mindspring.com.

Mike Penn is a long-time member of HLAA and a marketing/communications writer by profession. He currently works at Hewlett-Packard in Plano, TX.

The Help Desk

Whoever invented the concept of the help desk must have had a warped sense of humor. It is anything but help! As you know, many companies are outsourcing help desk calls offshore. Customers are faced with trying to understand agents' conversations flavored with a strong foreign dialect.

Recently, I was talking over the phone with an offshore help desk agent from India about a computer problem. With my hearing loss, the telephone itself is a challenging instrument for me to understand conversations. Agents speaking English are difficult enough to understand. When one adds a strong foreign accent to the conversation mix on the other end of the call...well, let's just say both parties may not leave the call with a positive experience!

After making the agent repeat what was said for the umpteenth time, our frustration level was already reaching the yellow ELEVATED level on the Homeland Security Advisory chart. It was when the agent began spelling out the words that the frustration level soared to the red SEVERE level.

Agent spelling out the words CONFIGURE SYSTEM:

- "C" as in Sagar
- "O" as in Oregon
- "N" as in Nimbalkar
- "F" as in Friday
- "I" as in Idaho
- "G" as in Judge
- "U" as in Utah
- "R" as in Darka
- "E" as in Egypt

We never made it past the first word. I simply said this conversation isn't working and ended the call.

Sigh. Where is an online chat service when you need one? Maybe the world of silence isn't so bad after all! At least I can keep my sanity. ■■■