

LIVING WITH HEARING LOSS

David G. Myers

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A hard-of-hearing college professor has "sounded out" the latest in hearing technology--and likes what he hears.

I have known for many years that I am on a trajectory toward deafness. When I was tested as a teenager, my hearing pattern mimicked my Mother's--an unusual "reverse slope" pattern of good hearing for high-pitched sounds (making soft male voices harder to discern than higher female voices). From upstairs, I can hear the high-pitched microwave oven timer, though my wife, Carol, snuggled beside me in bed, cannot. But I cannot recall ever hearing an owl hoot. Carol touches my leg at each hoot: "There, can you hear it?" I hear nothing.

I used to have a 1980s-vintage hearing aid, but it magnified all sounds--including those high-pitched sounds which I hear reasonably well. The clash of silverware became distracting, irritating, almost painfully loud. Part of that "loudness" was relative to my adaptation to a quiet world, rather like the sun's seeming brightness that we complain about when we emerge from a movie. Bothersome loudness also results from a common but little-known oddity of hearing loss. Damaged hair-cell receptors within the inner ear may fail to respond to soft sounds, yet respond normally to loud sounds (with a boost from neighboring hair cells that also begin to respond). Normal hearing progresses through sounds that range from quiet to moderate to loud and very loud. But once a person with significant loss is able to hear something, amplified loudness all too quickly becomes very loud and then uncomfortably loud. A person with hearing loss may therefore miss soft sounds that others hear but hear loud sounds quite normally.

Moreover, merely magnifying sound far from its source hardly improves its clarity. It's like a microphone recording a speaker from across a room: it records the reverberations of the voice and all the intervening sounds as well. You also have to put up with the distracting sound of your own distorted voice. So I seldom wore that hearing aid. (A friend reports a similar experience with his unused hearing aids, which "so greatly magnified the noise of chewing that I couldn't eat and converse at the same time.")

Only a little more than a seventh of the 28 million hearing-impaired Americans currently wear hearing aids. The rest either have not availed themselves of the technology, or they keep their aids at home in the dresser drawer.

Why don't people with impaired hearing wear hearing aids as commonly as people with impaired vision wear glasses? Audiological researcher Mark Ross offers several answers. In part, he believes, it is because of the stigma that attaches to hearing loss. We associate hearing aids with aging and disability. Who wants to look and feel old and decrepit? Aided by cosmetics and plastic surgery, we spend fortunes denying our age. Ironically, not wearing an aid may do even more to advertise that we are aging. In responding inappropriately or inattentively, people may seem rude, dimwitted, or closer to senility than any hearing aid could make them appear.

With the new generation of miniaturized, in-the-canal aids, the cosmetic barriers to wearing hearing aids are, however, coming down. The new aids are to hearing loss what contact lenses are to vision loss. Is President Clinton wearing his hearing aids? We don't know, because they are "completely in the canal."

To prepare myself for the transition to the new generation of hearing aids, I've surfed the Web and read all I can about hearing aids. The basic theme is the same: all aids include a microphone, an amplifier, a speaker, and a battery. But they differ greatly, I've learned, in size.

* Completely-in-the-canal (CIC) aids, such as Bill Clinton has chosen, are the smallest and least visible, yet they pack enough power for a wearer whose audiogram reveals a mild to moderately severe hearing loss.

* In-the-canal (ITC) aids are also small, though they protrude slightly from the ear. They have enough power for wearers with a wide range of hearing loss. They fill the softer outer part of the ear canal, whereas the CIC aid extends so deep into the ear that the wearer must remove it by pulling on a filament extension cord. Both types capitalize on the natural amplification capabilities of the outer ear.

* In-the-ear (ITE) aids come in a custom-made shell that fits securely into the outer ear with the speaker protruding into the canal. Their slightly larger size makes it possible to package some extra technology, such as dual-microphone systems and telecoils.

* The behind-the-ear (BTE) aid offers plenty of power and room for all the technology anyone might want.

A very few people with severe hearing loss use ultra-powerful body hearing aids, which are housed in a pocket case with an extension cord that connects to a speaker in the ear.

Hearing aids also differ in technology and price.

* Traditional (analog) aids offer a circuit that is not programmed or processed by a computer. Their purpose is to amplify sound, and the volume control lets the user decide how much sound comes through. Technologically the simplest, they are also the least expensive--often a thousand dollars or a little more a pair.

* Programmable analog aids allow the audiologist to program the amplifier on a computer. Through digital technology, these aids instruct an analog amplifier about which sounds to amplify. Technologically and costwise, they occupy a middle ground between analog and fully digital aids and might cost \$2,500 a pair.

* Digital aids are to analog aids what compact disks are to records. Digitization converts incoming sounds to numbers, which a tiny microchip with the computing power of a desktop computer then analyzes and reconstructs to suit the user's needs. When introduced, these sold for \$4,000 to \$6,000 a pair. If the effectiveness of these new instruments attracts a great many new customers, the price should decline.

For those whose hearing loss is about the same at all frequencies, a traditional hearing aid may suffice. For those of us who want a hearing aid that can customize sound to meet our needs and filter out unwanted noise, the digital generation is here. More than four in five patients report satisfaction with these new aids, according to Better Hearing Institute director Sergei Kochkin--double the satisfaction level of 20 years ago, he suspects.

Enthusiasts of the new aids say that if your old hearing aids have been relegated to a drawer, you may want to revisit your audiologist. Yesterday's aids sounded like transistor radios; today's digital aids offer the clarity of a CD. Yesterday's aids amplified all sound, including noise and sound in the frequencies we already heard well; today's aids can customize the output.

Yesterday's aids were plagued by wind noise and feedback whistlers; today's aids can be programmed not to produce such sound. Yesterday's aids were bulky; today's are miniaturized. Yesterday's aids had volume controls to be contended with; today's aids are self-adjusting--they amplify soft sounds but not loud sounds to suit our comfort level.

I could hardly wait to see whether all this technology really would, for me, make a noticeable difference....

Today my ears were stuffed with \$4,400 of the latest technology. After inserting the aids and temporarily attaching them to his desktop computer, my audiologist ran a test, electronically read my stored audiogram, and then programmed the aids accordingly. Soft, low sounds are enhanced by as much as 28 decibels in the left ear, loud or high sounds much less. These in-the-ear aids are somewhat smaller than the hearing aids I have had, but they protrude more than I had anticipated--and even more than Ed, my audiologist, would like ("because you have a shallow ear bowl").

"Well," I told Ed, "a guy of 56 cares more about function than about cosmetics."

My immediate reaction when Ed switched on the new aids was much the same as my reaction to the previous technology. My voice--it's so loud! (Carol tells me I often speak too loudly. Perhaps that problem will quickly be solved.) When I got into my car, the door slammed, the seat belt locked noisily, and the blinker signal seemed obnoxiously loud. And the radio--someone left it blaring! All this reminded me of the remark by a child of a family friend, shortly after he had received a cochlear implant: "Daddy, I think I like deaf better."

Then I recalled this week's frustrating faculty meeting where I had missed most of a lively debate. (A supportive colleague later summarized it for me.) Maybe, on second thought, I don't like hard-of-hearing better....

This weekend I attended a "communitarian summit" in Washington, D.C. At one session the speaker's voices seemed so strong that I assumed the room must have been equipped with microphones, but later I learned that it was not. The amplification devices were in my ears. Although the applause was irritatingly loud, I loved being able to hear all the questions and comments from the audience. The only stressful moment came when I stood up to ask a question and felt overwhelmed by my own voice (it came out fine, but the shock of it brought beads of perspiration to my face).

The aids come with a tiny, protruding push button that allows me to switch the sound from "basic" to "directional" to "telecoil" (with one, two, or three beeps--heard only by me--to confirm the setting). On "basic" I can hear people equally well whether they are in front of me or beside or behind me. On "telecoil" the aids become earplugs--blocking all sound except for that transmitted by a phone receiver or a neck loop. A little test at a pay phone in a noisy room suggested that I could probably hear better than fully hearing people--because I hear only what comes from the phone.

On "directional" I am supposed to hear someone in front of me noticeably better, while the sound from other directions is reduced. And I do! At a noisy cocktail party, I switched on "directional," and the speech of the person I was looking at came across as clear as a bell. While waiting to have a word with a syndicated columnist, I found myself able--if I faced him--to make out his words from a certain distance as he finished talking to someone else, almost as if I were eavesdropping. At dinner, with 250 people talking and a loud band playing, I again turned on the directional mike and had absolutely no problem understanding my companions on either side

(one of whom moved to sit closer to me because she was having trouble hearing). Although the background noise is still quite audible, my conversational partner's voice comes through clearly amid the surrounding hubbub. This is remarkable! And a study in the Journal of American Academy of Audiology (March 1999) confirms the advantage to the listener of directional microphones, especially in noisy situations-precisely where people with hearing loss need the most help.

If anything, the dramatic improvement in the signal-to-noise ratio exceeds my expectations. Reluctant hearing-aid wearers could hardly have a better incentive to take their aids out of the drawer each morning than a breakthrough of this magnitude. Our local paper quotes a man who is severely hard of hearing and has just purchased the same technology: "This is absolutely without reservation the best hearing device I've ever worn! This technology allows me to hear things I couldn't hear before. It's wonderful."

A century ago, our great-great-grandparents who were hard of hearing had nothing more than an ear horn or speaking tube to funnel sound to their ears; and a half century ago, my grandmother carried a clumsy hearing device the size of a pack of cigarettes and had to change a battery every two or three days to keep the vacuum tubes functioning. Think how far we have come!

Signs of Hearing Loss

IF YOU ARE EXPERIENCING A HEARING LOSS AND CONSIDERING A SOLUTION, HERE ARE SOME THINGS TO CONSIDER BEFORE YOU MAKE A DECISION.

JUST AS EACH INDIVIDUAL IS DIFFERENT, SO, TOO, IS A PERSON'S HEARING LOSS. NO TWO PEOPLE WILL LOSE HEARING ABILITY IN THE SAME WAY. FOR EXAMPLE, SOME LOSSES OCCUR IN THE HIGHER FREQUENCY RANGES, WHILE OTHERS MAY EXPERIENCE DIFFICULTY IN HEARING SOFTER SOUNDS.

SIGNS YOU MAY NEED TO HAVE YOUR HEARING EVALUATED BY A HEARING PROFESSIONAL:

- * You have difficulty at a restaurant listening to family and friends.
- * Your hearing condition causes arguments with members of your family.
- * Your spouse often tells you they frequently have to repeat things for you.
- * You attend church services or other social events less often because of your hearing problem.
- * You find it necessary to turn up the volume on your TV or radio beyond a normal level.
- * You experience feelings of frustration when you converse with others and have difficulty hearing everything they say.
- * You hear frequent jokes about your hearing ability.

IF YOU ANSWER YES TO SOME OF THESE QUESTIONS, YOU ARE PROBABLY SUFFERING A HEARING LOSS. MAKE AN APPOINTMENT WITH YOUR HEARING PROFESSIONAL FOR A COMPLETE HEARING TEST.

David G. Myers is an award-winning researcher and teacher of psychological science. His book, *A Quiet World: Living With Hearing Loss*, was just published by Yale University Press.

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