

Aural Argument

Toddlers' Implants Bring Upheaval To Deaf Education

Cochlear Devices Help Kids
Join Mainstream Classes;
Will Sign Language Die?

A Picket Against Dr. Green

By PAUL DAVIES

SIOUX FALLS, S.D.—Inside classroom 114 here, preschool teacher Kathy Stephens asked 4-year-old Kordell Waldner, "Do you need to go to the potty?" The boy got up and walked to the bathroom. When he finished, she told him to wash his hands. He stopped at the sink to do so.

It would be an unremarkable exchange, except Kordell is deaf. His school, the South Dakota School for the Deaf, shows the transformation—and some of the conflict—unleashed in the world of deaf education by implants such as the one in Kordell's ear that helps him hear. The superintendent who created a track at the school for children with implants faced protests from a group of mostly deaf parents and eventually left the job.

So-called cochlear implants—electronic devices surgically placed in the bone behind the ear—have been around for two decades. But it was only five years ago that the U.S. Food and Drug Administration approved the devices for use in children as young as 12 months. Now a new generation of children is entering deaf schools with the hope that they may someday hear and speak almost as naturally as those without hearing problems.

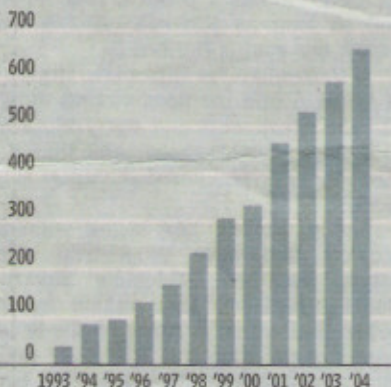
As this happens, it is reshaping a long-standing battle over how deaf children should be educated. Supporters of the venerable culture built up by deaf people believe deaf children should get a strong grounding in American Sign Language so they can participate fully in that culture when they grow up. But others—including some deaf kids' parents who can hear—want more emphasis on hearing and speaking English to prepare the children for life in the mainstream world.



Kordell Waldner

Audible Difference

Estimated number of cochlear implants in the U.S. in children under 3.



Source: Cochlear Ltd.

Now the implants are boosting their cause. More than 90% of deaf children are born to hearing parents.

Some steeped in deaf culture don't see themselves as handicapped and view implants as an attempt to "fix" something that isn't broken. They especially oppose hearing parents deciding to get implants for their deaf children, believing kids should make the decision themselves when they get older. "This is a major intervention, and the ethics of operating on a healthy child can be questioned," says Harlan Lane, a psychologist at Northeastern University in Boston who has written many books about the deaf community.

Research shows, however, that the implants work best when given to very young children, who develop language more quickly than adults. The implants don't create a perfect replica of the sound that hearing people hear, but re-

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cent models come fairly close. If a child of 3 or 4 gets an implant, a few years of training is often enough to make up for lost time and enable the child to blossom in hearing society.

'Godsend'

Michelle Foy of Sioux Falls says the implant was a "godsend" for her 7-year-old daughter, Catherine, who underwent the surgery in June 2001. "My only regret is we didn't get it sooner," says Ms. Foy. "One of the coolest things was this summer she was in a tap class and could hear everything."

Sign language and deaf communities built around it have come under attack before and survived. In the 1870s, Alexander Graham Bell led a movement that argued deaf children should be taught lip reading and vocalizing so they could communicate as well as possible with hearing people. Such views were dominant for much of the next century, but in the 1970s American Sign Language underwent a resurgence as linguists demonstrated it was a complete language with its own vocabulary and syntax. American Sign Language and the dozens of other sign languages used around the world have parts of speech, verb tenses and other features of spoken languages.

Deaf pride reached its peak in 1988 when student protests at Gallaudet University, known as the deaf Harvard, led to the hiring of I. King Jordan as its first deaf president. Many in the deaf community were overjoyed in September 1994 when Heather Whitestone McCallum became the first deaf woman to win the Miss America pageant. But eight years later she got a cochlear implant, disappointing some admirers.

Now the implants are beginning to take hold in much younger people. In 1995, only 95 implant operations were performed in the U.S. on children under the age of 3. Last year, that number rose to 662, and another 369 operations were performed on children between the age of 3 and 5. Overall, 10,000 children nationwide have received implants, according to the FDA.

Deaf children are being identified much earlier because of a 1999 federal act that funds hearing tests for newborns. While the FDA has approved implants only in children 12 months or older, some believe the implants are suitable for babies as young as 6 months.

Some kids aren't eligible for implant surgery because of problems with their hearing nerve or other issues, and the implant doesn't always work successfully. Getting an implant isn't like flipping on a switch to hear; even young children with a natural ability to learn language need practice in understanding the sounds coming in and mimicking them in speech.

Still, implants today are smaller than the early models and the acoustics have improved. Older devices made human speech sound like Darth Vader talking in the Star Wars movies, says Jon K. Shallop, an audiologist at the Mayo Clinic.

The new implants are "like going from Edison's original phonograph to a CD with surround sound," he says.

As the technology evolves, some see the day when deafness could be eradicated. Charles V. Brown, a board member at the South Dakota School for the Deaf Foundation, which raises money to support the school, told a group of parents at a meeting last summer: "If cochlear implants can make sign language and translators obsolete, then all the better." Deaf parents, and some hearing parents of deaf children, were shocked by Mr. Brown's comments. "He just needs to be educated," Marvin Miller, a deaf parent whose three kids attend the South Dakota School for the Deaf, says through a translator.

Northeastern's Dr. Lane says talk of eliminating deaf culture "horrifies" many deaf advocates. "Could you imagine if somebody stood up and said, 'In a few years we're going to be able to eliminate black culture?'" he says. "If hearing people saw the deaf community as an ethnic group with its own language as opposed to someone who is handicapped, then you wouldn't have such a deep misunderstanding."

Mr. Brown says his comments at the meeting were an attempt to be "shocking," but he sticks by them. "I do understand the tension" among the deaf caused by implants, he says. "It is a threat to their way of life. But the truth is deaf people have a significant handicap—one that impacts their earning ability."

Unlike hearing aids that amplify sound, a cochlear implant bypasses hair cells in the inner ear that normally sense sound waves. Surgeons place electrical contacts in the cochlea, a part of the ear that turns sound waves into electrical impulses. A tiny computer worn on the ear takes sounds and converts them into digital signals. These signals are transmitted to the implant, which in turn stimulates the auditory nerve and gets the message to the brain. A battery-powered electronic processor worn on the body drives the system. The device and the surgery together cost around \$60,000.

The first modern cochlear implants were developed in the 1960s and received FDA approval for use in adults in 1985. Today, three companies sell implants in the U.S. Cochlear Ltd. of Sydney, Australia, controls about 70% of the U.S. market and had world-wide sales last year of \$218 million, including \$84 million in the U.S.

The rise of implants presents a challenge to schools for the deaf. Many were already facing declining enrollment because of a 1975 federal law that encourages school authorities to place hearing-impaired children in regular classrooms and provide them with support there including a sign-language translator if needed. In the past decade, schools for the deaf have closed in Massachusetts, Nebraska, North Carolina and Wyoming.

To survive, many deaf schools are adding programs for kids with cochlear implants. Three years ago the South Dakota

School for the Deaf didn't have any students with cochlear implants. Today, a quarter of its 60 students have implants or hearing aids and the school expects the number to double in three years. Meanwhile, the number of students who communicate only through sign language is expected to drop to 28 students in 2009 from 45 currently.

In one part of the school building teachers work with students who have implants or hearing aids, stressing auditory and oral skills. Down the hall, another group of teachers communicates quietly with students who don't have implants using American Sign Language.

Former Superintendent Jon Green, who is deaf in one ear and hard of hearing in another, first opposed implants but changed his mind after a hearing mother came to the school seeking services for her child with an implant. Dr. Green now believes separate teaching tracks are the best way for the school to survive. "If the schools for the deaf do not change they are going to die," he says.

Parent Protest

In the spring of 2004 a group of mainly deaf parents started a movement to oust Dr. Green. They picketed outside the school and wrote letters to the governor and state board of regents, which oversees the school. Dr. Green took a leave of absence in the fall and in December resigned from the school permanently to do research at the University of South Dakota School of Medicine.

Dr. Green says the protesters were angry mostly about the implant program, fearing it would pull resources away from the sign-language curriculum. He points to an Internet posting by one critic making that point and says most hearing parents were on his side.

Deaf parents involved in the protest deny that it was aimed at overturning the implant program. They say their main beef was with Dr. Green's management style and the high rate of teacher turnover. Dr. Green says the turnover rate was in line with the national average.

Robert T. Tad Perry, the head of the state board of regents, says Dr. Green rubbed some in the deaf community the wrong way because he refused to use sign language when communicating with the deaf, instead letting a translator sign his spoken words. But he says he often found in letters he received and conversations with deaf parents that bubbling beneath the personality conflicts was opposition to the implant program.

"The deaf culture parents are very intense and want everyone to communicate using sign language," Dr. Perry says. "But the vast majority of kids in our school come from hearing parents. And we need to prepare everyone for life."

Jimmy Beldon, who is deaf and has three of his five children at the school, says he isn't opposed to the separate program for children with implants but believes all deaf children should learn sign

language. "Cochlear implants are not a cure for deafness," he says through an interpreter. However, many of the children with implants at the school aren't studying sign language.

Sioux Falls is unusual in having a thriving, well-educated population of deaf adults. Many deaf professionals have moved to the city to work for Communications Services for the Deaf, a non-profit that generates \$50 million a year in revenue from providing telecommunications services to the deaf community in 30 states with partner Sprint. CSD's headquarters and a call center are located on well-manicured grounds next to the deaf school. Sixteen students whose parents work at CSD attend the school.

Mr. Miller, the deaf parent who objected to the comments about eliminating deafness, used to work at CSD. He wants to build a town near Sioux Falls that would require everyone who lives and works there to communicate through sign language. The proposed town of Laurent, S.D., named after a 19th-century pioneer in deaf education, is still in the planning stages.

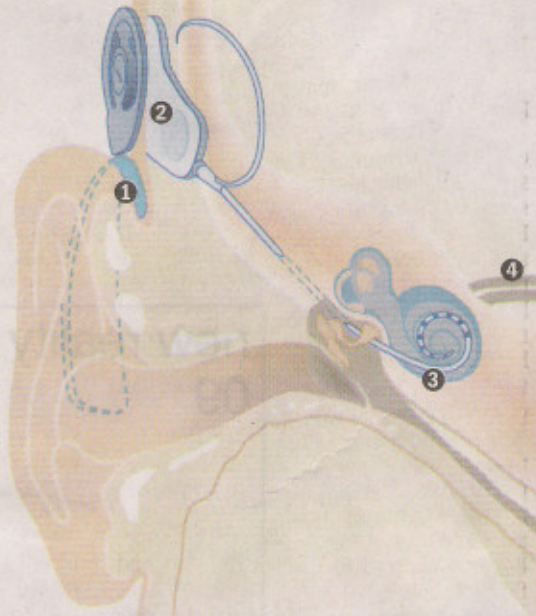
Much of the tension at the school appears to have eased since Dr. Green left. But the new superintendent has kept the dual-track system in place.

Classroom instruction for children with implants is intensive. One day in Ms. Stephens's preschool class, which consisted of three boys until a fourth child joined recently, she spent 20 minutes kneeling on the floor pushing a matchbox car along solid and dotted lines. She was trying to impress

How It Works

A cochlear implant bypasses damaged hair cells in the ear.

- 1 External speech processor captures sound and converts it into digital signals
- 2 Unit fixed on head gets signals from processor and sends them to internal implant
- 3 Internal implant converts signals into electrical energy, sending it to an electrode array inside the cochlea
- 4 Electrodes stimulate auditory nerve and the brain perceives sound



Source: Cochlear Ltd.

upon the boys the analogy with sounds that can be either continuous or broken up.

She pressed their hands under her chin so they could feel the vibration of her voice. Each boy struggled to repeat the exercise. Nonetheless, Ms. Stephens expects the boys will enter mainstream schools within the next few years. "I know the program works," she says.

Kordell Waldner received his implant in February 2004, so his verbal skills are similar to those of an infant. By the fall he understood voice commands and could say a few words. When the classroom bell sounded, Ms. Stephens said,

"All done." Kordell responded: "Yeah." Trying to drill in the words, the teacher repeated, "All done." Kordell said, "All done."

"Before, when he wanted something he just cried," says Kordell's mother, Theresa Waldner. "It was frustrating because he couldn't hear me and he couldn't express what he wanted."

Ms. Waldner says it took six weeks for her son to recognize his name. But with each month, he learns more words and is slowly building his vocabulary. "It's still difficult," she says. "But at least now, when I ask him a question he nods yes or no."