

Mayo Clinic Minute

The road to hearing for baby Aida

Video	Audio
Vivien Williams	The happy sounds of childhood ...
Vivien Williams	... a brother's giggle. A mother's loving coo ...
Melinda Little	"She loves her daddy."
Vivien Williams	... or the joy of your own calls of contentment.
Matt Little	"So very happy."
Vivien Williams	Baby Aida can't hear any of it. She was born deaf.
Melinda Little Aida's mom	"When you first hear it, you kind of say, 'That's not true,' or, 'What can we do to help it? You know, what can we do to make her hear?' I don't think I was ready for that kind of information."
Vivien Williams	Aida's mom and dad, Melinda and Matt Little, took her to Mayo Clinic, where a team of experts diagnosed Aida with a rare genetic condition.
Lisa Schimmenti, M.D. Clinical Genomics Mayo Clinic	"Aida has a condition called Waardenburg syndrome."
Vivien Williams	Geneticist Dr. Lisa Schimmenti says Waardenburg syndrome is a collection of symptoms caused by a change in a gene.
Lisa Schimmenti, M.D.	"If you went and Googled this disorder, you'll see pictures of people who may have a white streak of hair, or they may have one blue eye and one brown eye ..."
Nat sound of Lisa Schimmenti, M.D.	"This the fish lab."

Vivien Williams	Some of the tools Dr. Schimmenti uses to learn about deafness similar to Aida's are tanks full of zebra fish.
Lisa Schimmenti, M.D.	"We share 70 percent of our genome with zebrafish, and the same genes that cause conditions in us, cause the same condition in fish."
Vivien Williams	But, unlike these fish, Aida may benefit from technology to help her hear.
Matthew Carlson, M.D. Otorhinolaryngology Mayo Clinic	"Cochlear implant surgery and cochlear implant technology has evolved very significantly over the last several decades."
Vivien Williams	Surgeon Dr. Matthew Carlson is also on Aida's care team.
Matthew Carlson, M.D.	"There's a lot of different changes that happen in the inner ear that result in this hearing loss, but the end result is loss of inner ear hair cells for almost all these different conditions."
Vivien Williams	Here are the basics on how hearing works. The outer ear collects sound, which travels down the ear canal to the ear drum. The soundwaves cause the ear drum and middle ear bones to vibrate. The sound waves then move into the inner ear, or cochlea, where tiny hair cells turn them into electrical signals that are transmitted to the brain. A cochlear implant bypasses the missing hair cells. Baby Aida, like all patients who get cochlear implants, went through two steps. First was surgery. Through a small incision, Dr. Carlson and his team ...
Matthew Carlson, M.D.	"... slip a small group of electrodes or wires that are all kind of bundled together, and they follow the natural curvature of the cochlea. And the electrodes are connected to a device that's underneath the skin in the scalp."
Vivien Williams	The device sends a tiny current via the electrodes to the cochlea and then to

Animation continues	the brain.
Matt Little	“Right now, she has the initial implants, the magnets and the wiring that goes into her cochlea nerve. So to activate it, they’ll just have the outer piece attached, and then it’s just like, basically, from what I understand, like a Bluetooth headset, pretty much.”
Vivien Williams	Cochlear implants work for most people who have them, but there’s always the chance they won’t. Aida’s brother, parents, grandparents and cousins were all there the day audiologists at Mayo Clinic attached the outside piece behind Aida’s ear and turned it on for the first time.
Matt Little	“Hi, beautiful. Can you hear me? It’s Daddy.”
Matt and Melinda Little	“Hi ...Hi, Aida. Hi, Aida. Hi, big girl. Hello. Hello.”
Vivien Williams	To people in that room, witnessing Aida hear for the first time was to witness a miracle.
Melissa DeJong, Au.D.	“For me, it’s what brings me to work every day.”
Matt Little	“Just to be able to hear, 'Hi, honey' — hear the sounds around her — that’s what I’m looking forward to.”
Vivien Williams	For Aida to be able to hear the happy sounds of childhood.
	For the Mayo Clinic News Network, I’m Vivien Williams.