

COCHLEAR IMPLANTS FOR KIDS

Breaking the Sound Barrier

Annabella Macias entered this world on June 10, 2013.



Shown: Annabella Macias (left), now 2, with her mom Maryann Florio (right), is shown smiling at the sounds she is now able to hear coming from her headphones. Annabella was diagnosed with profound hearing loss as an infant and recently received two cochlear implants.

But her mother and grandmother believe that her true birthday was November 10, 2014, when Annabella's cochlear implant was activated allowing her to hear for the first time.

"It's like she is coming into this world for the first time," Annabella's grandmother Lauren Rolaf explained.

Annabella Macias is one of the nearly three million children under the age of 18 born with some hearing loss. In Annabella's case, she was diagnosed as an infant with what doctors call "profound" or significant hearing loss.

Now, thanks to The Bristol-Myers Squibb Children's Hospital (BMSCH) at Robert Wood Johnson University Hospital and Rutgers Robert Wood Johnson Medical School's Pediatric Cochlear Implant Program, Annabella can hear sounds and is making daily strides with her speech development. The Pediatric Cochlear Implant Program combines the services and expertise of a nationally-recognized children's hospital and an academic medical center making it the only comprehensive pediatric cochlear implant program in New Jersey. A multidisciplinary team composed of audiologists, speech/language pathologists, a medical geneticist, clinical psychologist and pediatric otolaryngologists provides comprehensive evaluation, treatment and rehabilitation services to children with severe-to-profound hearing deficit under one

roof. The program successfully completed its first cochlear implant in 2014. Annabella was among the first children to have the procedure which took place at BMSCH's Center for Advanced Pediatric Surgery, the state's only dedicated pediatric surgery center.

"Hearing loss can increase the risk of speech and language developmental delays," explained Kelvin Kwong, MD, Assistant Professor of Surgery at Rutgers Robert Wood Johnson Medical School and pediatric otolaryngologist (ears, nose and throat doctor) at BMSCH. "If a child cannot develop adequate oral communication skills, it can have a significant negative impact on their ability to learn."

According to Michael Chee, MD, also a Assistant Professor of Surgery at Rutgers Robert Wood Johnson Medical School and Pediatric Otolaryngologist at BMSCH, growing up without the ability to hear in a hearing family can be a lonely experience for a child.

"Giving these children the ability to hear through cochlear implants allows them to share activities with their families and take part in age-appropriate learning activities," Dr. Chee noted.

The realization that Annabella could not hear was a shock to her mom, Maryann Florio. After her birth, Annabella passed the initial hearing test given at the hospital.

"In her first three months, she wasn't responding to any sounds in the house," Ms. Florio said. "You could bang a pot next to her and there was no response."

Ms. Florio took Annabella to the doctor for another hearing test, which showed no reading indicating significant hearing loss. Annabella then was evaluated by a pediatric ear, nose and throat specialist to rule out additional problems and by an early interventional developmental specialist to gauge her cognitive skills.

"Her cognitive abilities were totally normal," Ms. Florio said.

Annabella was fitted with hearing aids for six months to confirm the results of the second hearing test. After researching pediatric cochlear implant technology, Ms. Florio decided it was the best option.

Following three months of tests which included genetic testing, MRIs and CT scans, Dr. Chee and Dr. Kwong performed Annabella's first cochlear implant procedure on October 9, 2014 and her second implant on April 30, 2015. The procedures involved surgically implanting an electronic prosthetic device in the inner ear under the skin. The device stimulates the child's cochlear (inner ear) giving them the ability to process sounds through special hearing aids. The child often returns home the same day after implantation.



Shown above: The Pediatric Cochlear Implant Program at The Bristol-Myers Squibb Children's Hospital at Robert Wood Johnson University Hospital, led by Michael Chee, MD (left) and Kelvin Kwong, MD (right), both Assistant Professors of Surgery at Rutgers Robert Wood Johnson Medical School, is giving kids with profound hearing loss the opportunity to lead a normal childhood through a program that includes not only surgery to implant the device, but follow-up care and rehabilitation.

Because every sound is so new, audiologists gradually increase the device's volume. Ms. Florio said Annabella's first implant activation startled her a little, but she quickly became comfortable with it.

Annabella continues to attend classes at a school for the hearing impaired and meets regularly with an early interventional development specialist.

"I almost cried when I said, 'Annabella' and she turned around to look at me," Ms. Florio said. "I want her to grow up like the other children on the block. She is catching up quickly; this was just a short interruption for her."

Visit www.bmsch.org/hearing or call 1-888-MD-RWJUH.