

# Echoes

THE CHILDREN'S HEARING INSTITUTE  
www.childrenshearing.org

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## *The Children's Hearing Institute approves iPad Grant request for Speech Therapists*

Extensive research has shown that there are many measures for the successful habilitation of children with hearing loss. Professionals agree the most significant measure is life success – a direct reflection of educational achievement. We have long known that language development is a particular challenge for deaf and hard of hearing children. A child's academic progress is directly linked to his or her underlying language skills.

Hearing loss affects children in many ways. Research has proven that vocabulary develops more slowly in children who have hearing loss. For example, it causes a delay in the development of receptive and expressive communication skills (spoken language skills). In turn, the language deficit causes learning problems that result in reduced literacy and academic achievement. These communication difficulties often lead to social isolation and a poor self-concept.

Most critically lacking in the intervention programming afforded to children with hearing loss is sufficient opportunity to practice targeted listening, language, and academic skills within meaningful, real-life contexts outside of therapy. Living and learning with hearing loss in this digital age places additional demands for the student with a hearing loss to acquire a level of competency in fully accessing and responding to information presented through multi-media sources.

"Smarty Ears," a company created in August of 2009 has been the new technological breakthrough in the area of speech and language therapy. Smarty Ears has been creating innovative iPhone, iPod and iPad applications for speech and language therapists, as well as for children/adults with communication disorders and their parents. Smarty Ears applications give parents the ability to provide their children additional practice in those areas affected by a speech or language disorder.



**A child in therapy uses an iPad purchased by CHI for the speech therapists at the NYEE Cochlear Implant Center.**

Up until recently, speech therapists have been limited to ordering paper and pencil activities or creating their own materials to be used for children with communication disorders. These materials are often expensive and static (quickly dated and useless by the vocabulary related to the time of publication). Smarty Ears adds one additional possibility to the market, which is the ability to instantly download materials on the iPod or iPad. These applications, in turn, have the potential of being periodically "updated" to accommodate the changing linguistic environment of our time.

Specifically valuable to children with hearing loss is the fact that the individual Smarty Ears programs obligate reciprocal interaction between the user (the child with a hearing loss) and his or her speech/auditory therapist and/or parent. Spoken communication by its nature requires verbal turn-taking or an active exchange of ideas between two or more

conversational partners. This provides a definite advantage over other available computer games or educational software structured so that the child/student works independently. \*In addition, children with communication disorders sometimes have reduced attention spans, making it difficult for improving their language or articulation skills. Smarty Ears adds the component of technology that children from this generation in particular love; increasing their attention span and making therapy, practice, and progress a much more intrinsic experience.

With its 1001 ways to improve the life of any human being, the use of the iPad has also been a hot topic in the disability community. It is the combination of superb touch screen devices with the scientific knowledge and experience from a speech therapist that is making the difference for thousands of children with hearing loss and special needs around the world.

# **LENA™ Pilot Study on Bilingual Language Expansion Funded by The Children's Hearing Institute**

The Language ENvironment Analysis (LENA) system is the world's first automatic language collection and analysis tool. Established by the Lena Research Foundation in 2007-2008, researchers have been using the technology to investigate many aspects of children's natural home language environments. A revolutionary tool, LENA provides real data on a child's language environment, including estimations of Adult Words, Conversational Turns, Child Vocalizations, and TV and Electronic Sounds in a child's natural language environment, and a breakdown of the composition of the Audio Environment. The breakthrough technology has the potential to help parents, clinicians, and researchers close the gap in language development between advantage and disadvantaged children and improve the language development of children with hearing loss and language disorders such as autism.

The Pilot Study consists of the LENA Digital Language Processor (DLP), an unobtrusive recording device that weighs 2 ounces. This device is worn by the child with hearing loss in their own environment and is able to: record up to 16 hours of continuous speech data/audio; collect and manage multiple recordings from a variety of clients or groups; view reports in 5-minute, hourly, daily, or monthly time frames; mark, organize and find specific audio segments easily and efficiently; add research or clinician notes and comments; and conduct an advanced analysis using the data mining tool – ADEX. The speech therapist will then take the DLP and connect it to the LENA software to process the audio recording to provide reports and data for analysis. Ultimately, this data will be used to enhance the language input directed to our pediatric population with hearing loss.

Conducting the research is Elizabeth Ying, Director of Hearing Habilitation at the New York Eye & Ear Infirmary. It has been well-documented that children with hearing loss are not able to fully access the enriched language models provided within their everyday home environments, often referred to as "incidental learning". Furthermore, children with hearing loss raised in bilingual home environments are at an even higher risk for language delays. Like their peers from monolingual home environments, infants and toddlers growing up in bilingual home environments experience similar difficulty accessing the language occurring around them. In addition, their speech and language development is hindered by the miss-match between what they hear at home vs. in therapy or in school. It is also assumed that there is a tendency for non-native English speaking families to talk less or to use less sophisticated language forms in their verbal interactions with their hearing-impaired children. The focus of the LENA investigation here at NYEE's Ear Institute will be to facilitate more enriched language-learning models within bilingual home environments through the direct instruction of age-appropriate language expansion strategies. Pre and post LENA analysis will be used to validate the effectiveness of this therapy intervention.

## **Background Information:**

It is well documented in the literature that monolingual Spanish-

speaking families were similar to English-speaking families with respect to: 1. parents talk more to daughters vs. son; 2. parents talk more to first-born; and 3. parents tend to use "closed ended" constructs and more verbal directives with children who have hearing loss compared to those with normal hearing.

Approximately 15% of students in US schools come from primarily Spanish-speaking homes (NCES, 2010). However in most US schools, instruction is conducted only in English and Spanish-speaking students face the dual challenge of acquiring the expected academic skills (such as literacy and math) and learning English as a second language. This challenge is particularly difficult for the student with a severe to profound hearing loss that is fitted with a cochlear implant.

## **Methodology:**

The purpose of this study is to obtain information regarding the parental input directed to both a child with a cochlear implant and a younger normal hearing sibling. It is predicted that there will be a difference in the maternal input directed to these siblings, e.g. with less sophisticated and more constructs requiring a yes/no response directed to the child with a hearing loss. LENA monitoring and transcription of a 24 hour period within the child's home will be obtained prior to the direct instruction/intervention to the Spanish-speaking parent regarding specific expansion techniques. A second 24 hour monitoring session will be transcribed following the instructional/ intervention programming.

## **Expected Results:**

It is expected that more open-ended maternal input will be documented. In addition, changes in child's English and Spanish verbal proficiency; specifically, increase in lexical diversity and linguistic complexity (w/increased parental expansion strategies).

An increase in word count, turn-taking, and complex linguistic forms is anticipated. The findings of this pilot will guide the formulation of more extensive IRB investigation of the benefit to different bilingual home environments (including Russian, Mandarin, Cantonese, Arabic, Italian and Wolof, e.g. representative of the caseload followed by the NYEE-Ear Institute's hearing habilitation program).

## **Applications are now being accepted for The Susan Cheffo Memorial Scholarship**



This scholarship will be given to a hearing impaired student who is a cochlear implant user and will be attending college in the Fall of 2012. If you are determined to overcome the challenges of hearing loss and strive to achieve academic success, please contact Myrna Farrell at 646-438-7819 or mfarrell@nyee.edu to request a copy of the scholarship guidelines and application. Deadline for submitting applications is Friday, June 8th.

If you would like to donate to the Scholarship Fund in honor of Susan, please make checks payable to The Children's Hearing Institute and reference Scholarship Fund in the memo or visit the Susan Cheffo Memorial Scholarship page to donate online at <http://www.childrenshearing.org/custom/susan-cheffo.html>.

# The Children's Hearing Institute Supports Hearing Loss Awareness Events



The Children's Hearing Institute partnered with the New York Mets to sponsor Deaf and Hard of Hearing Awareness Day at CitiField on Saturday, September 24th. The Institute provided over 800 free tickets to the patients of the Cochlear Implant/Hearing & Learning Center at The New York Eye & Ear Infirmary as well as several other deaf and hard of hearing programs in the New York City Metro area.

## Brendan Borowsky and Cub Scout Pack 146 raise money for The Children's Hearing Institute



Our Lady of Sorrows Cub Scout Pack 146 in White Plains recently raised money playing bingo to donate to a charity of their choice. The Cub Scout pack visited The Children's Hearing Institute website and viewed the 25th Anniversary Documentary that describes the services and programs that benefit hearing impaired children and their decision was made.

Brendan, age 10, was diagnosed with a hearing loss at age 1 and received his first cochlear implant at age 2 and his second implant at age 5 by surgeon, Dr. Ronald Hoffman at the New York Eye & Ear Infirmary. His hard work and perseverance has shown his ability to overcome any obstacle that gets in his way. Today, Brendan is an outgoing energetic boy and fully mainstreamed in 4th grade at the Our Lady of Sorrows School.

Brendan says, "I am thankful for everything that CHI does for hearing impaired children – especially me. I am doing great, studying hard and having fun everyday!"

The Children's Hearing Institute is proud to have generous friends like Brendan and Cub Scout Pack 146. On behalf of all the children who depend upon our services, we thank you for your thoughtful donation.



On Sunday, October 2nd, The Children's Hearing Institute also sponsored a team for the Hearing Loss Association of America – Walk4Hearing in Riverside Park. Patients, friends and families joined the CHI Walk Team to end the stigma of hearing loss and provide support and resources for hearing loss prevention and awareness programs.

## "Sister Crafts" donates proceeds to The Children's Hearing Institute



Last summer, two exceptional and caring sisters created their own arts and crafts to sell in their local neighborhood. Sofia, age 12 and Serena, age 10 named their summer project "Sister Crafts." It was the decision of these two generous girls to donate the proceeds from their sale to The

Children's Hearing Institute.

Serena and Sofia were both born with Levy-Yeboia Syndrome, a rare congenital, multi-symptom disorder. One particular symptom of this syndrome is loss of hearing (neuronal deafness). Both Serena and Sofia, hearing impaired since birth, had their hearing restored with a cochlear implant and are doing extremely well. They attend Our Lady of Grace Catholic School in Brooklyn, are members of the Girl Scouts, and enjoy Hip Hop classes at their local Dance School.

"Both girls are like every other pre-teen. They enjoy their friends, music, pop stars and are very fashion forward!" says their Mom, Christine Lattuga. "We always teach our children to be thankful for all they have and that the greatest gift is not to receive but to give."

The Children's Hearing Institute is very grateful for this donation and thank Serena and Sofia for their giving spirit. We wish them all the best on their future projects.



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*The Children's Hearing Institute has revised our Facebook Page. Like Us and receive updates on upcoming events and workshops.*

**PLEASE SAVE THE DATE!**



# The Children's Hearing Institute's Benefit Cocktail Reception:

**Honoring the  
"Power of Parents"**

ELLEN AND JASON WINKLER  
BELINDA AND DAVID TOPKINS  
JIEUN AND WON CHOE  
LISA AND KOTTUR VASANTH

**and their  
"Hearing Hear-O" Children**

JAGGER WINKLER  
TARLOW "LULU" TOPKINS  
CALEB CHOE  
KATE AND BRENDAN VASANTH

**Thursday, April 26, 2012 • 6:00PM  
The Metropolitan Club • One Sixtieth Street, New York City**