RESEARCH TIMES

What OCHL researchers learned from Your Child

and how these findings will benefit other kids

Outcomes of Children with Hearing Loss

A newsletter for PARENTS

www.ochl-study.org
When long-awaited Sammy was born, his parents were prepared for the lack of sleep and changes to household routines that a new baby brings. However, they were not prepared to hear that Sammy did not pass a routine newborn hearing screening. Sammy’s parents have normal hearing, and the pregnancy was uneventful; thus, the test results came as a shock. By the time Sammy was just a few months old, a permanent hearing loss was confirmed, and his family was left wondering: “How can we parent this child to ultimately become happy, well-adjusted and successful in school?”

SAMMY’S STORY MAY RESONATE WITH MANY OF the families in the OCHL (Outcomes of Children with Hearing Loss) Study. Just as Sammy’s parents want to learn the best ways to support him, OCHL researchers seek answers to the same overarching question: “What factors lead to successes and what are the barriers that challenge children with hearing loss, as compared to their peers with normal hearing?”

To chip away at this large research question, Drs. Bruce Tomblin and Mary Pat Moeller, the originators of the OCHL Study, developed a careful and systematic approach to research with the goal of studying many children, both with and without hearing loss. Equipped with funding from the National Institute on Deafness and Other Communication Disorders, they assembled teams at the University of Iowa, Boys Town National Research Hospital, and the University of North Carolina and began inviting children and their families to participate in the study.

Now in the fifth year, thanks to the generous cooperation of participating families, researchers have collected an impressive pool of information. Here’s where the OCHL Study now stands – by the numbers:

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<th>Research Articles</th>
<th>National and International Conference Presentations</th>
<th>Children Recruited</th>
<th>Service Provider Surveys and Family Interviews</th>
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Over the next year or two, the OCHL Study team will pore over the collected data, trying to identify which factors best help children with hearing loss develop communication, academic and social abilities. While testing of the children continues, some trends are emerging. Here’s a preview of what researchers have learned so far.

**Early diagnosis and treatment**
National goals suggest that all newborns should be screened for hearing loss by 1 month of age; those who fail the screen should have a hearing evaluation by 3 months of age; and those with hearing loss should get hearing aids and other services before 6 months of age. The OCHL results show that professionals are making progress toward these goals, but we’re not there yet. Of the children in the OCHL project who failed newborn hearing screening, about two-thirds had a confirmed diagnosis of hearing loss by 3 months, two-thirds were fit with hearing aids within a month of diagnosis, and three-quarters were enrolled in early intervention by the time they were six months old. The research team has analyzed factors that lead to delays in these key steps for some children, so they can be prevented in the future.

**Hearing aid fit**
The better the fit of hearing aids, the better children develop vocabulary and speech skills. Study results show that while many children’s hearing aids fit well, some do not have optimal amplification and miss some words that are spoken, especially softly spoken speech. This, in turn, holds back young children’s abilities to develop language skills. For some children, this is correctable by optimizing fittings to promote the ability to develop language skills.

**Hearing aid habits**
Clinicians would say that, ideally, children should wear their hearing aids whenever they are awake, although OCHL researchers find that a ‘perfect world’ and reality can be different things. In particular, children with milder hearing losses wear their hearing aids less than those with moderate or severe hearing loss. Also, older children tend to wear their hearing aids
more often than their younger counterparts. These results will help to guide the ways professionals support families in keeping hearing aids on young children.

**School readiness**
Overall, children with mild to severe hearing loss are doing well in their communication skills. When the OCHL researchers look at children at each age, they find that most fall within the average range on several tests of speech and language abilities. Not surprisingly, though, skills that arise from hearing speech sounds (such as “s” on the ends of words in cats or walks) are harder for these children to learn and/or they develop the skills at later ages than children who can hear all sounds well. By studying children over time, researchers hope to learn whether children with hearing loss catch up in their language abilities and if so, when and how that happens. They also want to know how delayed skills or well-developed skills impact children when they start school.

Young children who are hard of hearing do as well as their peers with identifying printed letters and words, and they understand what they’ve read relatively well. However, these children have a harder time with the sound structure of spoken words and that could eventually present some trouble sounding out new words they read. More research is needed to better understand how reading skills develop in children with hearing loss.

**Social abilities**
Children with hearing loss tend to lag behind those with normal hearing in their understanding of how others think and feel. This slower development of social skills is likely because hard of hearing children do not hear all pieces of conversations—particularly when many people are talking or they are in a noisy environment. The OCHL researchers hope to continue to learn more about what these social delays might mean and how delays might be prevented.

**What’s ahead**
The OCHL Study is unique in that its research team studies children’s development, or, in other words, how children change over time. For this reason, children are tested several times as they grow, and research conclusions can only be drawn toward the end of the study. The OCHL team will continue to monitor and test children enrolled in the study until August 2013. During this same time period, OCHL team members are seeking additional grant funding to continue this important research; in particular, they are interested in knowing more about how children with hearing loss and their peers make gains during their school years.

Stay tuned! Bookmark the www.ochl-study.org website to keep up to date with what the OCHL researchers are discovering and what research lies ahead.

**Want to know what kids really hear?**

THE OCHL RESEARCH TEAM DOES! TO LEARN MORE about how many words children with hearing loss are exposed to on a typical day, OCHL researchers used a new technology with 50 of the children enrolled in the OCHL Study. LENA (Language ENvironment Analysis) works much like a fly on the wall; children wear audio recorders in pockets on their clothing, and the LENA records the words spoken by the kids and the people around them. The children wore their LENA’s one day each month.

By comparing the richness of the children’s language surroundings with tests that measure their language skills, OCHL researchers can see just how much the amount of language children are exposed to influences their own language development. This will help the team uncover the best ways to encourage communication growth in children with hearing loss.

The research team is pleased to learn that parents of children with both normal hearing and those with hearing loss talked to their children a lot! Children in the study were exposed to around 1,300 words each hour, and parents and their children took turns chatting back and forth about 60 times per hour.

“Most parents won’t have ever considered how much they talk, and these numbers show them just how much work they do!” said Sophie Ambrose, PhD, an investigator working with families in the LENA project at Boys Town National Research Hospital.

According to Dr. Ambrose, it’s important for parents to do more than just talk “at” their children though; they also need to have back-and-forth conversations with their children. These conversations give children a chance to practice their own talking, which is very important for language development. Overall, the OCHL team is seeing that parents are very good at having conversations with their children. However, too much television watching in the home can result in fewer parent-child chats, which in turn, can slow down language development.

So, what is Dr. Ambrose’s take-home message for parents of young children with hearing loss who want to encourage language development? “Turn off the television, and keep up the good—and talkative—work!”

‘Overall, children with mild to severe hearing loss are doing well in their communication skills.’

MARY PAT MOELLER, PhD, Co-director of the OCHL Study