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Association for the Deaf
in World of Hearing



Listening and Spoken Language: From Start to Finish
EHDI Pre-Conference Workshop
March 8, 2020

3417 Volta Pl NW | Washington, DC 20007 | Direct: 202-204-5220 | www.agbell.org


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Speakers

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- Don Goldberg: dgoldberg@Wooster.edu
- Carol Flexer: cflexer@uakron.edu

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About AG Bell



A life without limits
for children with hearing loss

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AG Bell Since 1890



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Related Background and Disclosures for Gayla Guignard

- Audiologist (CCC-A)
- Speech-Language Pathologist (CCC-SLP)
- Listening and Spoken Language Specialist Auditory-Verbal Therapist (LSLS Cert. AVT)
- Direct Service Provider (1989-2010); Administrator/Leadership Positions-(2003-current)
- Mother-Advocate, IFSP, IEP, Transition, Voc Rehab, Community Services, Life (1995-present)
- Salary Paid by AG Bell
- Board Member, Council on the Education of the Deaf



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Learner Objectives

By the end of this course, learners will be able to:

- List the range of communication and language opportunities for teaching infants, toddlers, and preschool-aged children who are deaf or hard of hearing
- Describe the critical importance of excellence in audiology as the foundation of listening and spoken language development
- Detail key components of assessment and intervention that equip professionals, parents, and ultimately, children in optimizing access to hearing, and therefore, spoken language

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Your Learning Tools

- Small Group Discussion of 2-3 minutes: Write it down and tell somebody
 - AG Bell Notecards-Write it down and tell somebody
- Ask Anything--Use blank notecard to write down questions and hand to one of the presenters
- PDF of PowerPoint and additional resources on conference website
- Lots of Content!

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Workshop Table of Contents

- The Big Picture: An Introduction to Our Topic
- Hearing Now: Creating a Neurological Context
 - Small Group Discussion
- Audiology: The Foundation of Listening and Spoken Language
 - Break
- LSL: Nuts and Bolts
 - Small Group Discussion
- Knowledge and Skills of Certified LSL Specialists (LSLS Cert. AVT/LSLS Cert. AVEd)
- How Does LSL Fit in with EHDI?
 - Resources
 - Small Group Discussion
- Ask Anything

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Getting on the Same Page-Data

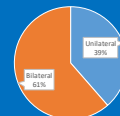


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Hearing Loss in One vs. Both Ears

EHDI, 2017 Babies

<https://www.cdc.gov/ncbddd/hearingloss/2016-data/14-type-and-severity.html>

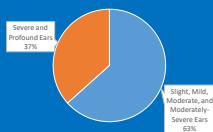


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Degree of Hearing Loss by Ears

EHDI, 2017 Babies

<https://www.cdc.gov/ncbddd/hearingloss/2016-data/14-type-and-severity.html>

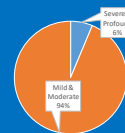


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Degree of Hearing Loss by Person

NHANES II & III Prevalence Ages 6-19 years

Donahue (2007), Eisenberg et al. (2007); Tomblin & Hebbeler (2007)
Retrieved from 11/15/17 handout, Longitudinal Outcomes of Children with Mild to Severe Hearing Loss: Auditory Experience Matters, Mary Pat Moeller, Ph.D



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Getting on the Same Page- Communication Options/Choices/Opportunities



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How do Children who are Deaf or Hard of Hearing Communicate?

Individually and Specifically
Uniquely, yet Predictably
In Lots of Different Ways
No One Size Fits All!

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Getting on the Same Page- Myths and Misconceptions



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Getting on the Same Page

- Myths and Misconceptions about Listening and Spoken Language (LSL)

- LSL is only for high SES families -- MYTH
- LSL is only for children with cochlear implants -- MYTH
- LSL is only about speaking English -- MYTH
- LSL is not available in my geographic area -- MYTH
- LSL is successful only for "Stars" -- MYTH
- LSL should not be used with children with multiple challenges -- MYTH
- LSL is the same as just talking to the child -- MYTH

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Getting on the Same Page- Evidence-Based Assumptions



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Getting on the Same Page

- If Assumptions Must Be Made, Try to Make Them Based on Good Evidence:

- Quality studies with large numbers of children and clearly defined research protocols exist
- Baseline and regular comprehensive assessments of a child must happen across time. Otherwise, how will we know what is happening with that child?

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Parent Choice

While AG Bell's mission is to promote the fact that children who are deaf or hard of hearing can learn to listen, talk and thrive.

AG Bell embraces Parent Choice; in other words, a parent's right and responsibility, when provided with the various options/choices/opportunities, to make decisions for their child until their child is of an age to make decisions for himself/herself.

AG Bell has several Position Statements that can be accessed at www.agbell.org



Position Statements

- <http://www.agbell.org/Advocacy/Spoken-Language>
- <http://www.agbell.org/Advocacy/Cochlear-Implants-in-Children>
- <http://www.agbell.org/Advocacy/American-Sign-Language>
- <http://www.agbell.org/Advocacy/Communications-Access-Captioning>

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Basics about Listening and Spoken Language

<https://www.agbell.org/Families/Communication-Options>

- An approach to language, literacy, social development and life!
- Making the most of hearing technology
- Stimulating the child's brain (where hearing occurs) immediately
- Knowledgeable and skilled professional(s) partnering with parents and caregivers to support their child

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What is Listening and Spoken Language?

- Listening and Spoken Language is an outcome
- Listening and Spoken Language is also a communication mode and any and all spoken languages can be developed through listening and talking.
- Listening and Spoken Language is also a communication approach/option/choice/decision that families can make for their child, regardless of the child's type or degree of hearing loss.

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Who Guides Listening and Spoken Language?

- A professional and family partner in that the professional guides and coaches families and other caregivers to develop listening and spoken language and the family provides feedback and leads carryover outside of sessions
- 930 professionals are certified worldwide
- A LSLS Cert. AVT or LSLS Cert. AVEd has passed a certification exam that confirms competence in that professional's ability to guide and coach a family to attain and sustain (at least) age-level listening and spoken language

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LSL from Start to Finish

- From auditory awareness to "full-blown" communicative competence



<https://www.definitions.net/definition/Communicative%20competence>

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Communication Milestones Birth-3 months

Hearing and Understanding

- Startles to loud sounds
- Quiets or smiles when spoken to
- Seems to recognize your voice and quiets if crying
- Increases or decreases sucking behavior in response to sound

Expressive/Talking

- Makes pleasure sounds (cooing)
- Cries differently for different needs
- Smiles when sees you.....

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Communication Milestones Ages 4 to 5 years

Hearing and Understanding

- Pays attention to a short story and answers simple questions about them
- Hears and understands most of what is said at home and in school

Expressive/Talking

- Uses sentences that give lots of details
- Tells stories that stick to topic
- Uses the same grammar as the rest of the family
- Communicates easily with other children and adults

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Listening and Spoken Language

- Questions, Questions-Who, What, Where, When.... Why and How?



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Wh-Questions Regarding Listening and Spoken Language

- Who? In Sessions-Parent/Caregiver-Child-LSL Professional
- What? Attain and sustain spoken language through hearing
- Where? At home, in the community, in special settings as needed
- When? Start right away and go back as needed across time
- Why? To develop communicative competence and more!

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Wh-Questions

The main points to remember about Listening and Spoken Language for a child who is deaf or hard of hearing:

- The child must be appropriately supported and expected to attain (at least) age-level spoken language skills
- Ongoing monitoring and management must be in place to make sure the child can sustain those skills across time.

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Small Group Discussion followed by a Quick Break

- *Write it down and tell somebody* – What do you want to remember from this section of the course?

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Hearing in 2020: Creating a Neurological Context

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[Carol Flexer, PhD, FAAA, CCC-A, LSLS Cert. AVT](#), is a Distinguished Professor Emeritus of Audiology, The University of Akron, and is an international lecturer and consultant in pediatric and educational audiology.

Financial Disclosure:
Carol's travel costs to this conference are being funded by the AG Bell Association.

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Topics Discussed:

- What is the family's desired outcome?
- The world has changed!
- The relationship of the infant/child's brain neuroplasticity to the use of hearing aids, cochlear implants and wireless technologies
- A Model for Connecting the Dots: Promoting language, literacy and music for all children, based on the family's desired outcome

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Always start conversations with The Critical Question: What is the Family's Desired Outcome?

- The family's desired outcome guides us – ethically and legally.
- What is your long term goal for your child?
- How do you want to communicate with your child? What language(s) do you know?
- Where do you want your child to be at age 3, 5, 14, 20? What does it take to get there?
- *95% of children with hearing loss are born to hearing and speaking families.*
- *Many families use a main language at home other than the school language, so they likely are interested in their child speaking several languages.*

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So, let's create a context that presents the big picture for families who want a listening, spoken language, and literacy outcome for their children.

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The world has changed

- How did we used to talk about hearing loss, and what did we believe to be true?
- We used to believe and talk about hearing as if we heard with the ear – now we know that is not the case. The meaning of hearing occurs in the brain.
- The world has changed for hearing healthcare; we are in a new era.
- Advances in knowledge about brain plasticity, auditory deprivation, and critical periods for language development have shifted the concentration of hearing management from the ear to the brain.

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The world has changed

We have a new generation of children who are deaf or hard of hearing—a generation that is not only benefiting from advances in early hearing screening and the use of advanced hearing technology, but a generation that is also the beneficiary of what we now know about brain development, early childhood development, and language and literacy development.

Today's children experience a different context – a different ecology.

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The Big Picture: The World Really Has Changed!

- *Who Moved my Cheese?* by Spencer Johnson, M.D. – a book about change
- We are an Information/Knowledge-based economy that demands high levels of spoken communication and literacy.
- We are educating children to take charge in the world of 2030, 2040, and 2050....not in the world of 1970 or 1990 or even 2022.

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Auditory Neurophysiology: What we now know

So, where to start?

Begin at the beginning

Making the connection between hearing loss, auditory neural deprivation, and use of hearing technologies -- and, how to explain this connections to families

Brain Clip

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Let's begin with a Brief Summary of What We Now Know about the "Auditory Brain"

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Sample of References for Brain Research

- Kral A. (2013). Auditory critical periods: a review from system's perspective. *Neuroscience*, 247: 117–33.
- Kral, A., Kronenberger, W. G., Pisoni, D. B., & O'Donoghue, G. M. (2016). Neurocognitive factors in sensory restoration of early deafness: A connectome model. *The Lancet Neurology*, 15(6), 610-621.
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- Kraus, N. (2018). Promoting sound health. *The Hearing Journal*, 71(11). 5.
- Moon, C., Lagercrantz, H., & Kuhl, P. K. (2013) Language experienced *in utero* affects vowel perception after birth: A two-country study. *Acta Paediatrica*, 102,156-160.

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References for Research about Outcomes

- Ching, T.Y.C., Dillon, H., Leigh, G., & Cupples, L. (2018). Learning from the longitudinal outcomes of children with hearing impairment (LOCHI) study: Summary of 5-year findings and implications. *International Journal of Audiology*, 57(S-2), S-105-S-111.
- Dettman, S.J., Dowell, R.C., Choo, D., Arnott, W., Abrahams, Y. et al. (2016). Long-term communication outcomes for children receiving cochlear implants younger than 12 months: a multicenter study. *Otology & Neurotology*, 37(2): e82-e95.
- Geers, A.E., Mitchell, C.M., Warner-Czyz, A., Wang, N.Y., Eisenberg, L.S., & the CdCI Investigative Team. (2017). Early sign language exposure and cochlear implantation benefits. *Pediatrics*, 140(1). e20163489
- McCreery, R.W., Walker, E.A., Spratford, M., Bentler, R., Holte, L., Roush, P., Oleson, J., Van Buren, J., Moeller, M.P. (2015). Longitudinal Predictors of Aided Speech Audibility in Infants and Children. *Ear & Hearing*, 36, pp. 245-375.

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Basic Science: (Kral et al, 2012; 2013; 2015; 2016)

- The results of Dr. Kral's studies (along with the research of others) suggest that when the brain does not have access to intelligible speech during the early months and years of a child's life, meaningful auditory input does not coordinate activity between primary and secondary auditory cortex.
- Instead, secondary auditory cortex assists with the processing of other functions such as visual processing.

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Kral et al.... Basic Science Continued

That is, when auditory signals are not efficiently and effectively transmitted from primary to secondary auditory cortex, the secondary cortex cannot distribute spoken language and other meaningful sounds/information to the rest of the brain to create auditory meaning and knowledge; *this negative process is called "downstream degradation"*.

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Auditory System Complexity (Kraus, 2018)

- The auditory system has more relays connecting the sensory organ to the brain than other sensory systems.
- The auditory system contains some of the longest axonal tracts.
- Axonal tracts directionally link each of the auditory relays between the ear, brainstem, midbrain and cortex.

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Sound Processing Complexity (Kraus, 2018)

- Sound processing is one of the most computationally demanding tasks the nervous system has to perform.
- The task relies on the exquisite timing of the auditory system, which responds to input more than 1,000 times faster than the photoreceptors in the visual system.
- Humans can hear faster than they can see, taste, smell or feel.

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The Challenge: How do we take our current knowledge of neuroplasticity and auditory deprivation, and use that information to create a brain context for managing hearing loss?

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The Following slides describe a *Counseling Narrative*: Right from the start, explain complex information in a comprehensible fashion – offer the big picture!

Families often do not know what we are talking about.....define terms.

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To Begin With: What is Sound? (Boothroyd, 2019)

- Sound is an “event” – not a label.
- For example, you don’t “hear” Mommy. You hear Mommy walking, talking, singing, tapping, dancing.
- An event creates vibrations.
- Vibrations are picked up by the “ear doorway” and are sent to the brain as energy for coding, and for perception as information.

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What is Language?

- Language is an organized system of communication used to share information.
- Language consists of sounds, words and grammar used to express inner thoughts and emotions.
- Language includes facial expressions, gestures, and body movements.
- Language is the ideas/knowledge you have in your head.

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How Does Information Get into the Child’s Brain?

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Five senses capture environmental information and transform that information into neural impulses read by the brain:

- Hearing
- Sight
- Smell
- Taste
- Touch

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For Example, the Nose is the “Doorway” to the Brain for the Sense of Smell – but, we smell with the *brain*.

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Another example: The Eyes are the Doorway to the Brain for Visual Information.

But, we see with the brain – not the eyes.

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The point: The Ear is the "Doorway" to the Brain for Sound -- Spoken Language/Information -- Talking -- Reading.

We hear with the brain -- not with the ears!

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So, what is Hearing Loss? We can think about Hearing Loss as a "Doorway" Problem

- The ear is the "doorway to the brain" for sound.
- Hearing loss of any type and degree obstructs that doorway a little (hard of hearing), a lot (hard of hearing) or completely (deaf), preventing sound/auditory information from reaching the brain where the meaning of auditory information occurs.
- Hearing aids and cochlear implants break through the doorway to allow access, stimulation and development of auditory neural pathways.

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The purpose of technologies (e.g. hearing aids, cochlear implants, remote wireless systems) is to get sound -- auditory language information -- through the doorway to the brain.

There is no other purpose!

The choice of technology depends on what is happening in the doorway.

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An Audiogram is the way we measure the quantity and quality of the "Doorway" Problem

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Well then, What is Hearing?

- Hearing can be defined as "brain perception of auditory information."
- Hearing is a first-order event for the development of language -- spoken communication, literacy skills, and social-emotional connections.
- Anytime the word "hearing" is used, think "auditory brain development" using 1 billion neurons with a quadrillion connections!
- Acoustic accessibility of intelligible spoken language is essential for brain growth.
- **There are no "gadgets" -- the brain is available for auditory information!**
- Signal-to-Noise Ratio (SNR) is the key to hearing intelligible auditory information -- speech must be 10 times louder than background sounds. Download [10 dB SNR for Deaf and Hard of Hearing](#).
- **Our early intervention programs and classrooms must take into consideration the child's brain access of acoustic information for language and for social growth.**

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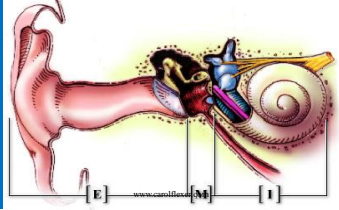
THE EAR

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First display a picture of the “Brain Ear”,
and then the more traditional picture of
the “doorway” ear, showing:

Outer (external), Middle and Inner Ear



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It's All About The Brain

Hearing loss is not about ears; it's about the brain!

Hearing aids, RM systems and cochlear implants
are not about ears; they are about getting
auditory information to the brain!

They are “brain access tools”.

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So, what Does “Deaf” Look Like in 2020?

- Does 2020 “Deaf” look like 1990 “Deaf”?
- We have used the same words for decades, but the context and possibilities have changed, dramatically!
- We can now talk about hard of hearing and deaf as descriptors of the status of the (ear) doorway.

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*Therefore, we now know we must
always consider:*

What auditory information has reached
and developed the brain, through the
ear/doorway?

What is the status of the child's auditory
brain?

Where has the brain been?

What does the brain “know”?

What is the Child's “Hearing Age”?

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Putting it All Together – “The Logic Chain”

- The Logic Chain is a model that summarizes what we know, at this point in time, about the ingredients necessary to create a listening, speaking, and reading brain.
- The Logic Chain represents a system of foundational structures that must ALL be in place to optimize the attainment of a listening, spoken language and literacy outcome; no link can be skipped.
- Family-focused Listening and Spoken Language (LSL) intervention plays an integrated role – but not the only role.
- See Offer.HearingFirst.org/EHDIResources for the complete, research-based, document.

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The Logic Chain Model – We now know all links must be
evaluated and managed to create a SYSTEM for the
attainment of a listening and spoken language outcome – if
that is the outcome the family desires.

• Brain Development >

> General Infant/Child Language Development in the
Family's Home Language >

• Family-Focused LSL Early Intervention >

• LSL Early Intervention for Literacy Development

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Listening and Spoke Language (LSL) Development

How much parents converse with their child is the best predictor of the child's language competence, whether or not the child has a hearing loss.

Parents need to speak the language(s) they know.

Wear hearing technologies 10-12 hours per day. "Eyes open, technology on".

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Listening is the Foundation of Reading

- It takes approximately 20,000 hours of listening to speech before a child's brain has clear mental referents for each of the speech sounds.
- This listening ability is necessary to enjoy rhyming and to develop phonological awareness skills.
- Reading is parasitic on listening.
- **The Goal is grade-level literacy by the end of third grade!**

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Professionals -- Coach Families to Read, Read, Read to children!

Creating Neural Pathways for Reading: An Exercise in Plasticity, because Reading is not Natural

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Why Read Aloud?

- Exposure to storybooks is the biggest factor in a preschooler's vocabulary.
- More parent-child conversations occur during read alouds than during any other activity.
- Children who receive read-alouds show gains of more than twice as many new words.
- Reading aloud to children before age 6 effects language, literacy and reading development.
- *Think about reading aloud as a conversation, not as a task to be completed.*
- You can never read too much!

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To Summarize.....

- Hearing loss is a neuro-biological emergency, and we must act urgently to avoid auditory sensory deprivation!
- For families choosing a listening and spoken language (LSL) outcome for their children who are deaf or hard of hearing (status of the doorway), the appropriate hearing technologies for breaching that doorway must be fit and managed as soon as possible after birth by a pediatric audiologist.

Fitting hearing technologies is the first line of treatment for auditory sensory deprivation.

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To Summarize....

- Brain access devices must be worn at least 10 hours per day, and families are encouraged to speak their home language, beginning in infancy. Use a remote microphone system at home as well as at school.
- Children need to be immersed in a conversation-enriched (talking, reading aloud, and musical) environment in order to grow their brain with knowledge for spoken language and literacy development. The neurological concept is, "experience dependent plasticity".

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General References

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Small Group Discussion and Break

- *Write it down and tell somebody*– What do you want to remember from this section of the course?

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Don Goldberg PhD, CCC-SLP/A, LSL Cert. AVT Disclosures

- Salary paid by The College of Wooster
- Paid Professional Staff Member of the Cleveland Clinic Foundation
- Board Member, AG Bell International
- Board Member, Joint Committee on Infant Hearing (AG Bell Association representative)
- Board Member, Council on Education of the Deaf (AG Bell Association representative)

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Communication Modes/Methods

Manual vs. “Oral”

Manual: ASL, MCE, Bi-Bi

Combined: Total Communication/TC & Cued Speech

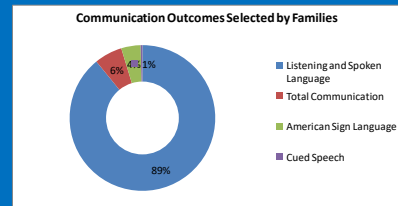
Listening and Spoken Language:

Auditory-Verbal (Acoupedics/Unisensory)
&

Auditory/Oral (with a history of reception via speechreading)

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Family Choice: Snapshot North Carolina



Source: www.hnc.org of North Carolina is a non-profit agency providing an impartial approach to serving the diverse needs of families with children who are deaf or hard of hearing and the professionals who serve them.

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Audiology: The Foundation of Listening & Spoken Language

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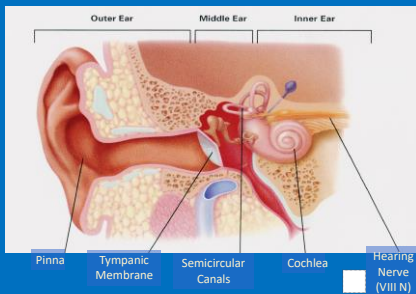
The Ear

- Outer Ear
- Middle Ear
- Inner Ear
- "Beyond the Cochlea"

WE HEAR WITH OUR BRAIN –
The EAR is just the way IN!

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Let's talk about HEARING!



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Outer Ear/Tympanic Membrane/Middle Ear

Pinna / Auricle; Ear Lobe; Concha (ear canal opening);
External Auditory Meatus / EA Canal
(beware of CERUMEN – ear wax)

T M – “border” between the OE and ME

Ossicles: Hammer/Malleus; Anvil/Incus; Stirrup/Stapes

- Eustachian Tube (connecting the Middle Ear Space and the Nasopharynx – back of the throat)

Middle Ear Space should be air-filled

OME- Otitis Media with Effusion/ME Fluid

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Inner Ear

- Cochlea
 - Scala Vestibuli
 - Scala Media
 - Scala Tympani
- Semicircular Canals (Vestibular System / Balance)

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Hearing Testing

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Audiometric Test Battery

- **Otoscopy**
 - visual inspection eardrum and ear canal
- **Tympanometry**
 - test of middle ear function
- **Acoustic Reflex Thresholds**
(ipsilateral / same side contralateral / opposite side)
- **Otoacoustic Emission (OAE) Test**
 - test of outer hair cell function in inner ear (cochlea)
- **Auditory Brainstem Response (ABR) Test**
 - provides info about inner ear and brain pathways for hearing
- **Behavioral Testing**
 - method of testing varies by age of patient

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Otoacoustic Emission (OAE) Testing

- Measurements obtained from ear canal with probe
- Records cochlear responses to acoustic stimuli
- Reflects status of peripheral auditory system extending to the cochlear outer hair cells
- Will NOT identify Auditory Neuropathy



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OAEs – Pros & Cons

Pros of OAEs

- Frequency-specific
- Present at birth
- Infant can be awake for testing

Cons of OAEs

- Only provides info about OHC status
- Requires normal middle ear function
- Response altered by ambient noise
- Does not indicate degree of hearing loss

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Auditory Brainstem Response (ABR) Testing

- Measurements obtained from surface electrodes
- Records neural activity in cochlea, auditory nerve, and brainstem in response to auditory stimuli
- Reflects status of peripheral auditory system, 8th nerve, and brainstem auditory pathway
- Will identify Auditory Neuropathy



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ABR – Pros & Cons

Pros of ABR

- Indicates degree of hearing loss
- Assesses greater area of the auditory pathway
 - Various stimuli options

Cons of ABR

- Assesses only synchronous neural function
 - Infant must be asleep for testing

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Universal Newborn Hearing Screening (UNHS)

- Nearly 4 million babies were born in the USA in 2017
- 98.3% of babies were screened
- UNHS has changed the life experience of babies who are born deaf or hard of hearing who live in the USA and in many other countries
- Newborn hearing screening puts the family on a path that actively asks the question, "Can my baby hear?"

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JCIH Statement Principles (2019) Aspirational, Ambitious, and Encouraging Babies Can't Wait!

1. All infants should continue to receive a hearing screen by **1 month of age**
2. All infants who do not pass the initial screen and subsequent re-screen would have audiological confirmation of hearing loss by **2 months of age**
3. All infants with confirmed hearing loss would receive intervention services* by **3 months of age**

*Intervention refers to **both** fitting of Technology AND Early Intervention services from a "Qualified Provider"

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UNHS

- Not all children are screened
- Some children are born at home – Train the midwives!
- Need to be sensitive to screen non-documented and other family's wee-ones
- Many U.S. programs only test with OAEs and likely miss ANSD (ideally need 2-test models-- ABR & OAE tests)
- Some hearing losses will be progressive
- Disease processes occur in the first months of life and are therefore missed at birth
- Hearing losses can be acquired

92

Behavioral Testing

- Conventional Audiometry
 - ~ age 5 years* & beyond!
- Conditioned Play Audiometry
 - ~ age 2-5 years*
- Visual Reinforcement Audiometry
 - ~ age 6 months-2 years*
- Behavioral Observation Audiometry
 - ~ below 6 months*

*refers to developmental age of patient



93

TYPES of Hearing Loss

- Conductive Hearing Loss (affects the OE &/or the ME)
- Sensori-Neural Hearing Loss / SNHL (affects the IE &/or cranial nerve viii/the auditory nerve)
- Mixed Hearing Loss (combination of Conductive HL & SNHL)

94

Audiogram

- Graphic representation of the hearing testing results
- X axis / Across the horizon / the Frequency range; on the top left – low pitch; to mid pitch; and to the top right – higher pitches
- Y axis / up/down / the intensity in dB HL range – top of the audiogram "soft" sounds; down the audiogram towards the bottom – "loud" sounds

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Audiogram

- **Red** symbols for Right Ear (RE)
- **Blue** symbols for Left Ear (LE)
- NO Response (NR) arrow angled downward

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Types of Hearing Loss from the Audiogram

- Within Normal Limits (WNL)
- Conductive Hearing Loss (Air-Bone Gap/ABG exists); Bone Conduction (BC) thresholds are WNL and Air Conduction (AC) thresholds are abnormal/poor
- Sensorineural Hearing Loss (SNHL) – Air conduction (AC) and Bone Conduction (BC) thresholds are similarly abnormal/poor
- Mixed Hearing Loss: an ABG exists, the BC thresholds are poor and the AC thresholds are even worse (hence the ABG)

97

Audiograms

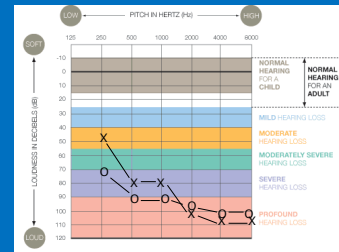


Image from League for the Hard of Hearing

98

Degree of Hearing Loss
Does NOT Predict
Level of Auditory
Function

99

Other Auditory Measures

A variety of Speech Audiometric & Speech Perception measures may be completed

- **Speech Recognition Threshold (SRT)** Stimuli: spondee words – assesses low frequency hearing/especially vowel info.
- **Word Recognition / Word Identification**
- (closed set-picture pointing; or open set-repeat back procedures) Stimuli: Phonetically Balanced (PB) words – more typically assesses higher frequency/consonant sounds

100

Speech Perception/Other Pediatric Measures

Word Recognition:

- * ESP (Pattern Perception *plus*)
 - NU-CHIPS
 - WIPI
 - PBK-50

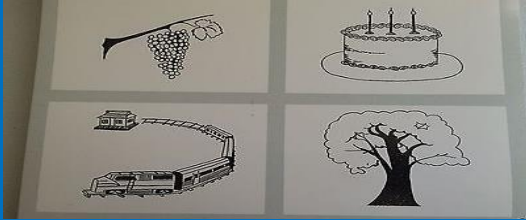
101

Early Speech Perception (ESP) (Moog & Geers, 1990)

(Moog & Geers, 1990)

102

NU-CHIPS



103

WIPI



104

Speech Perception/Other Pediatric Measures

Parent Report/Judgments & Pediatric Tools:

- Infant Toddler Meaningful Auditory Integration Scale (IT-MAIS)
- Meaningful Auditory Integration Scale (MAIS)
- Parents' Evaluation of Aural/Oral Performance of Children (PEACH)
- Mr. Potato Head, Pediatric Az, Baby Bio, MLNT, LNT, Checklist of Auditory Communication Skills, LittleEars, PLUS!

105

Speech Perception and Other School-Age Measures

Teacher Report/Judgments:

- Teachers Evaluation of Aural Performance of Children (TEACH)
- SIFTER/s (Preschool, School-Age, Secondary)
- Listening Inventory for Education (LIFE) (Student Appraisal / Teacher Appraisal)
- Functional Listening Evaluation
- Functional Auditory Performance Indicators (FAPI)

106

So Many Different Types of Audiologists!

- Pediatric Audiologists
 - Diagnostic (Auditory Electrophysiologist, Pediatric specialization)
 - Dispensing Audiologist
 - Cochlear Implant Audiologist
 - (Re) Habilitative Audiologist
 - Educational Audiologist

107

GOAL

**Comprehensive Audiologic Management
Leads to
Auditory BRAIN ACCESS !!!**

108

Winning Combination

Appropriate Technology & Auditory Brain Access
PLUS
Enriched Auditory Exposure
=
AUDITORY BRAIN DEVELOPMENT

(Dunn & Holcomb, 2019)

109

Hearing Sensory Technology

- Hearing Aids
 - * Remote Microphone (RM) Technology
 - * Other Hearing Assistive Technology
 - * HAT: Listening / * HAT: Alerting Devices
 - * Cochlear Implants
 - * Auditory Brainstem Implants
 - * Auditory Osseous-integrated Systems
- (*"Bone Anchored Hearing Aids," is not the correct term – Ponto by Oticon and "Baha" by Cochlear Americas)

110

Hearing Technology Worn
Throughout the Child's Waking Hours
For 10-12 hours per day

111

"Technology Retention" -- Consider Trying:

- www.hearinghenry.com
 - #1 -- EAR GEAR -- Spandex sleeve slips over hearing devices. Has stretch cord and plastic locking clip. www.gearforears.com
 - Oto/Critter Clips www.westone.com
 - JoyBandsLLC.com
 - www.Silkawear.com
 - Ciwear.com
 - Frogglez -- "No Hazzle Swim Goggles" www.thegromet.com
- www.hannaandersson.com (BEWARE of covering the mic)

112

Remote Microphone Technology
(RM/FM/s/IR) – **NON-NEGOTIABLE!**



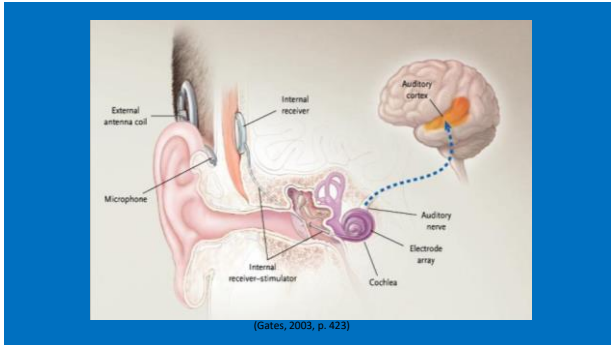
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Signal-to-Noise Ratio (SNR)

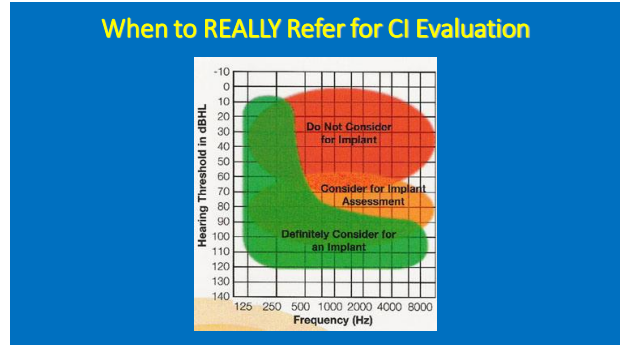
Relationship of the intensity of the speech / instructor's signal to the intensity of the unwanted signal (noise)

Should be a positive number
(+15 to +25 dB SNR)

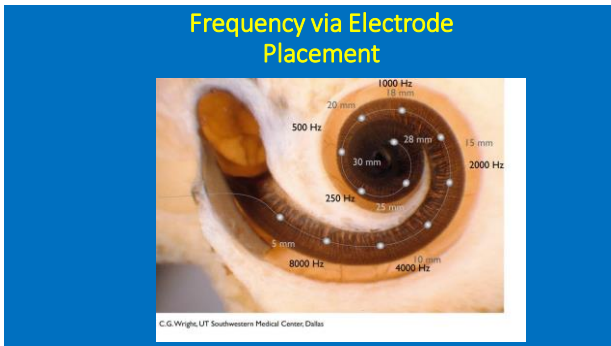
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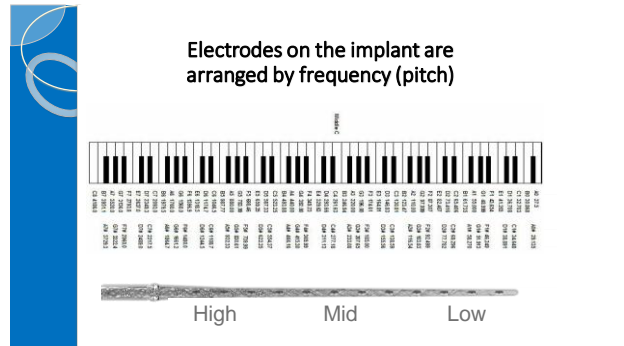
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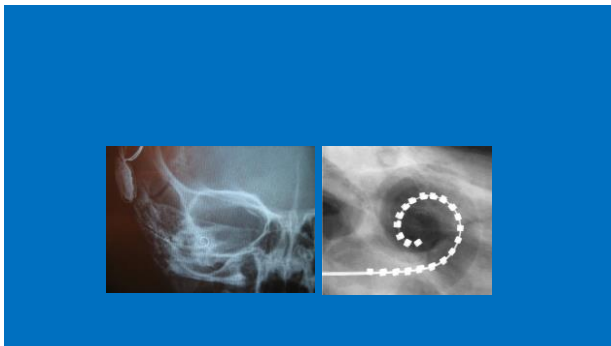
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120

AG Bell "Audiologic" Protocol

Alexander Graham Bell Association's
Recommended Protocol for Audiological
Assessment, Hearing Aid and Cochlear Implant
Evaluation, and Follow-Up (2014)

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AGBell Protocol Components

Overview of Audiological Management:

- * 1-3-6 (ICIH)
- * Recommendation of frequent evaluation

Questions Parents Should Ask for Good/Better/"Best" Audiologic Management

- Pediatric Expertise?
- "Aggressive" Testing Schedule?
- Does the audiologist believe that "Every dB counts/matters"?
- Does the audiologist request Parent/Clinician/Educator Input?

122

AGBell Protocol Components

Recommended Elements of the Initial Audiological Diagnostic Assessment:

- * Comprehensive Audiological Evaluation
(Birth to Age 6 Months; Age 6 to 36 Months)
- * Reports/Audiograms/Referrals

123

Audiology Recommendations

Because – every dB counts!

<u>Unaided Testing</u>	<u>CI/HA Testing</u>
Right Ear	CI-Only
Left Ear	CI & HA
<u>Aided Testing</u>	HA-Only <small>(if possible)</small>
Binaural	<u>Bilateral CIs</u>
Right HA	Both CIs
Left HA	Right CI-Only
	Left CI-Only

124

Birth to Age 6 Months

- * Otoscopic Inspection
- * Child and Family History
- * ABR (click versus tone pips) (replicate waveforms?)
(reverse polarity?)
- * Auditory Steady State Response (as appropriate)
 - * OAE (as appropriate)
- * Tympanometry (Wide Band Reflectance)
- * Parent's and Clinician's Input/Observations
(Auditory Behavior, "Overall" Development)

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Age 6 Months to 36 Months

- * Otoscopic Inspection
- * Child and Family History
- * Parental Report of Auditory/Visual/Communication
Behaviors and Milestones
 - * Behavioral Audiometry
- * Speech Detection/Speech Recognition Threshold/Word
Recognition/Speech Perception
- * Acoustic Immittance/Tympanometry and AR Thresholds
 - * OAE testing (as appropriate)
 - * Electrophysiological Testing (as appropriate)

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Other Elements/Questions for Good / Better / "Best"

Do the Parents understand the results?
 Do the Parents understand the management plan?
 What is the follow-up plan/schedule?
 Are parent questionnaires used – IT-MAIS, LittlEars?
 Audiogram and Report available? Understandable?
 Was the testing RELIABILITY noted?
 Copies to other providers?
 Referrals to other professionals? (pediatrics, ENT, genetics, social services, psychology/counseling, OT, PT, others?)

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AGBell Protocol Components

Recommended Procedures to Assess Amplification:

- Electroacoustic Analysis
- Real-Ear-to-Coupler Differences (RECD) Measures
- Cortical Auditory-Evoked Response Testing
- Sound Field "Aided" Testing
(soft/~35 dB HL; conversational speech intensity/~45/50 dB HL)
 (testing in Quiet and at varying SNR/s / testing in noise)

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AGBell Protocol Components

Recommended Audiological Management for Children with CI/s

129

AGBell Protocol Components

Recommended Audiologic Management Regarding RM Systems

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AGBell Protocol Components

RECOMMENDED ASSESSMENT PROTOCOLS –
By Age of Child (0-6 months, 6-12 months, 12-24 months, 24-36 months, Over 36 months)

Electrophysiologic Testing (ABR, OAE, ASSR)
Immittance Testing
Behavioral Testing
Speech Perception Testing (Includes Recommended Speech Test Protocols by Age)
Testing With Technology
Hearing Aid / CI / Bimodal / RM-FM Testing

131

Hearing and Auditory Experience Matter!

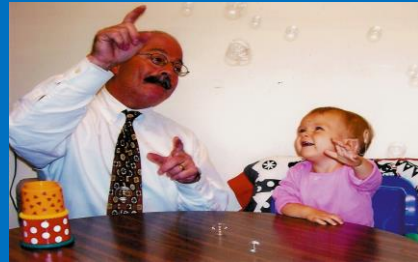


132

Small Group Discussion and Break

Write it down and tell somebody – What do you want to remember from this section of the course?

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Brief History of Auditory Teaching

- Victor Urbantschitsch (1895)
- Max Goldstein/CID (1939)
 - Emil Froeschels
- Helen Beebe & Doreen Pollack
- Daniel Ling / Agnes Ling Phillips
 - Many others to follow!

135

Helen Hulick Beebe

Auditory-
Verbal
Pioneer



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137

Give back to parents
their natural role as
their child's first and
most important teacher

(adapted from Pollack, 1970)

138

It's ALL About Communication!



Auditory Teaching / Auditory Learning

DMG: Avoid the term “Auditory TRAINING”

Recommendation -- Consider instead:

**Auditory Teaching /
Auditory Learning**

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Principles of A-V Therapy Practice

(AG Bell Academy for Listening and Spoken Language, 2009)

1. Early diagnosis, audiologic management, and AVT.
2. State-of-the-art **hearing technology** to obtain maximum auditory stimulation.
3. Guide and coach parents to help their **child use hearing as the primary sensory modality** in developing listening and spoken language.

141

Principles of A-V Practice

4. Guide and coach **parents as primary facilitators** of **child's** listening and spoken language development through active consistent participation in individualized AVT.
5. Guide and coach parents to create environments that support **listening throughout the child's daily activities.**

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Principles of A-V Practice

6. Guide and coach parents to help **integrate listening and spoken language into all aspects of the child's life.**
7. Guide and coach parents to **use natural developmental patterns ...**
8. Guide and coach parents to help their **child self-monitor** spoken language through listening.

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Principles of A-V Practice

9. Administer on-going formal and informal diagnostic assessments to develop individualized A-V treatment plans – **diagnostic therapy** – to evaluate clinical effectiveness
&
10. Promote education in “regular” **classrooms with peers with “typical” hearing** and *with appropriate support services* from *early childhood onwards.*

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Principles of A-V Practice

Above PRINCIPLES were adapted from Pollack (1970)

- An A-V Practice requires **all** 10 principles to be in place.
- “Parents” also includes other caregivers who interact with the child.

145

FOUNDATIONS OF AUDITORY TEACHING



146

Auditory Teaching Techniques

- Emphasize LISTENING
- “Prompt ‘Listen’”
- 1-on-1 Time
- Parents are Partners
- “Hand Cue”
- Use Acoustic Highlighting
- Integrate speech/auditory learning & language goals
- Use “Pause Time”
- Use Conversational Turn-Taking
- “Role reversal”
- Keep High expectations

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Auditory Teaching Techniques

- Pay Attention to Acoustics
- Keep AUDIOLOGIC MANAGEMENT – “key” priority
- Beware of Repetition
- Use “Sabotage”
- Listening Age/Hearing Age
- Use Cognitive-Based Activities
- *“Teach Don’t Test”*
- *“Put It Back Into Hearing”*
- Follow an AUDITORY Levels of Functioning Paradigm

148



Auditory-Based Teaching Does **NOT** Merely Mean Putting An Acoustic Hoop In Front of Your Mouth!

149

Patient Information

Name: _____		School Information (if applicable)	Mother: _____				
DOB: _____			Father: _____				
CCF Clinic # _____			Siblings: _____				
			Residence: _____				
Left Ear		CI Status	Right Ear				
CI 1	CI 2	HA	NONE	CI 1	CI 2	HA	NONE
Device: Cochlear / AB / MED-EL		Unilateral		Device: Cochlear / AB / MED-EL			
		Simultaneous Bilateral					
CI Surgery Date: _____		Sequential Bilateral Inter-implant Interval _____yr; _____m.		CI Surgery Date: _____			
CI Initial: C.A. Activation Date: _____		Bimodal		CI Initial: C.A. Activation Date: _____			
CI Age: _____; _____		Hearing Aid(s) (1/2)		CI Age: _____; _____			
HA Fitting Date: _____				HA Fitting Date: _____			

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Lesson Plan: Auditory-Verbal/Auditory-Based Therapy Session Notes

Name:	Session Date:	Hearing Age:	Unilateral CI	Bimodal
DOB:	Age:	Left Ear: C 1 C 2 HA NONE	Simultaneous Bilateral CI/s	
Sex:	Session Time:	S:	Sequential Bilateral CI/s	
Yr:	a.m.	A:	Unilateral HA	
Mo:	p.m.	Right Ear: C 1 C 2 HA NONE	Binaural HAs	
Da:		S:		
On:		A:		
the:		AL:		
_____		Cochlear Americas Advanced Bionics MED-EL		
_____		Phonak HA Oticon HA Ponto B-A Baha B-A		

Participants:	Seating:			CI 1 to CI 2 Interval: _____
Mother:				
Father:				
Others:	Session Behavior:			
Audi System:		Auditory/Clapppt Results/Recs (Date/Aud. Initials)		
Home Report:			Next Audi. Appt	
			Last AVT	
			Next AVT Session/:	

--- = approximation M = modeled S = spontaneous H = home report

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Activities	Lesson Plan: Notes
1. Ling 67: 10/10/10	
2. Speech Perception Word Identification	
1. Experience Book V / N	
4. Catch-Up	
5.	
6.	
7.	
8. Book:	Next Lesson(s) Targets/Ts/Notes:
SM/Tracking:	
Songs:	New Vocab: Handout(s)/Provided: Upcoming *Testing*/Dates

152

Lesson Plan: Ling Six Sound Test

Distance for Detection/Identification

Sound	1'	3'	6'	9'	12'
/u/ oo					
/a/ ah					
/i/ ee					
/ / sh					
/s/ ss					
/m/ mm					

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- ### Lesson Plan: Preschool Concepts
- Colors, Shapes, Numbers, Sizes, Alphabet/Weather
 - Calendar (days, months, seasons)?
 - Prepositions, Pronouns, Verbs, Adjectives, Adverbs
 - Sequencing (___-part); Following Directions (___-step)
 - Rhyming
 - Go-Togethers; Opposites; Textures; Occupations
 - Memory
 - Phrase Cards (Orange/Peanuts)
 - Sorting-Classifying; Descriptions
 - Matrix (_____ + _____)
 - What's Wrong / Missing / Different
 - What Doesn't Belong?

154

- ### Lesson Plan: Morphology / Syntax
- Present Progressive (is + VERB-ing)
 - Pronouns; Possessives
 - Negation; Contractions
 - Is/Are; Was/Were; Has/Have
 - Plurals (Irreg. / Reg.)
 - Verbs-Tense (Irreg. / Reg.)
 - If/Then; Compound Words; Articles;
 - Conjunctions
 - Qs: What / Who / When / Where / Why / Which / Yes-NO / How

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- ### Lesson Plan: Speech
- /a, i, u, aU, aI, ɔI, ɔ, U, I, ae, o, e, /
 - Step 1: / b, p, w, h, m, f, v, th/
 - Step 2: / d, t, sh, s, z, n, l, j/
 - Step 3: / k, g, ch/

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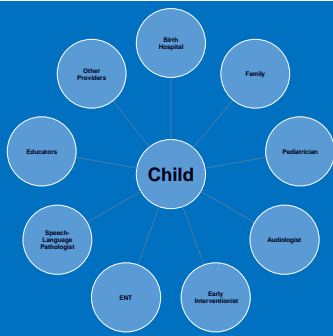
Use of Technology Throughout All Waking Hours– 10-12 hours per day

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KEY:

Parents as partners and case managers, but a whole team is involved.

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159

PARENT NOTES WRITTEN DURING THE SESSION:
AUDITORY-VERBAL/AUDITORY-BASED COMMUNICATION
THERAPY SESSION

- Session targets:
- Ling 6 Sounds:
- Speech Perception:
- Language areas:
 - Vocabulary
 - Morphemes/Grammar
 - Concepts

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PARENT NOTES WRITTEN DURING THE SESSION:
AUDITORY-VERBAL/AUDITORY-BASED COMMUNICATION
THERAPY SESSION

- Experience Book:
- Learning to Listen sounds:
- Speech Sounds:
- Strategies for the Week:
- Power Words:
- Song:

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PARENT QUESTIONS DISCUSSED AT THE END OF THE SESSION:
AUDITORY-VERBAL/AUDITORY-BASED COMMUNICATION
THERAPY SESSION

- What made sense today?
- What was confusing?
- What information do you need?
- What can we do to help you?

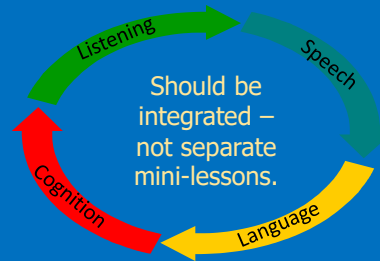
162

Pay Attention to Acoustics

- Positioning in therapy lessons
- Use of RM systems
- Use Acoustic modifications
- Know your “speech acoustics”

163

Interplay of Targets



164

Major technique:

Careful attention to the Child’s “Levels of Auditory Functioning”
An Auditory “Hierarchy” *

165

Levels of Auditory Functioning – My How Far We Have Come!

Comprehension:

Is there meaning to this sound?

Recognition/Identification:

Is this sound distinct from other sounds?

Discrimination:

Is this sound different from other sound?

Detection:

Was there a sound?

166

Daniel Ling



167

Ling Six (Seven) Sound Test

ah (/a/)

oo (/u/)

ee (/i/)

sh

s

m

(Ling & Ling, 1978)

Consider
“NO SOUND”
as the
7th Sound

(Rosemarie Drous,
Formerly of the
Helen Beebe Speech & Hearing
Center)

168

Ling Six Sound Test

Distance for Detection/Identification

Sound	1'	3'	6'	9'	12'
/u/ oo					
/a/ ah					
/i/ ee					
/ ʃ / sh					
/s/ ss					
/m/ mm					

169

Quick Check – Is the HA/RM/CI Working???

– Ling Sounds

- Present auditorily
- Mix up the sounds
- Tell the parents/audiologist which sounds are not being heard?
- Verify in “ALL” Conditions
- Consider: Enhanced communication from CI Centers to Schools & Schools to CI Centers

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“Sample” Auditory Dx Battery

- Youngest: Ling 6, ESP, IT-MAIS, PEACH
- Preschool: Ling 6, ESP, IT-MAIS, GASP!, TAC
- Older: Ling 6, ESP, GASP!, TAC, Listening Comprehension Test-2, SIFTER

171

Assessment of Speech/Speech Intelligibility

172

“Typical” Speech Sound Development

*Typical range. **Upper age limit of consistent production. Adapted from Hawkins, B. Journal of Speech & Hearing Disorders, 1973.

173

Assessment of Language

174

Receptive / Expressive Language

Form
(Morphology, Syntax, Phonology)
Content
(Semantics / Semantic Relationships)
Use
(Pragmatics)

175

Language Assessment

Evaluate
FORM/CONTENT/USE
at both the *receptive* &
expressive levels

Use “typical” language
assessment tools
normed on “hearing”
clients

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OTHER PROBES

Case History
Family Information
Object Permanence
Cause & Effect
Consider: Ireton/Minnesota; MacArthur-Bates;
REEL-3; among others.

177

Transfer: Test Data to Intervention Goals/Objectives

- Use “tests” that assist you in developing intervention
- Be hierarchical
- Vary field size (closed/open set; # in set)
- Be functional
- Have fun! (otherwise – Why bother?)

178

Data Collection

- “Interventionists” should be keeping data.
- What outcomes are being measured/ monitored?
- Both “informal” and “formal” measurements are needed.

Measure/Monitor:

- LISTENING SKILLS / AUDITORY DEVELOPMENT
- SPEECH SOUND REPERTOIRE / SPEECH INTELLIGIBILITY
- RECEPTIVE LANGUAGE / COMPREHENSION
- EXPRESSIVE LANGUAGE

179

Data Collection

- **Measure** skills frequently
- Complete **longitudinal recordings/sampling**
- Use “**formal**” **diagnostic measures** addressing AUDITORY, SPEECH, LANGUAGE, & COGNITION
- Use “**informal**” **diagnostic tools**
- Continually **assess the PARENTS**, as well as the KIDDO who is deaf or hard of hearing!

180

Are We On Course?

- Overall – What is the child's Auditory-Speech-Language Progress?
- Some other specifics:
 - Wear time of CI/s?
- Progression through auditory hierarchy (basic awareness of sound to Ling Sound detection to Ling Sound recognition/identification, Learning to Listen sound associations, etc.)?
 - Increases and changes in speech sound production?
- Receptive/Expressive language growth?

181

Are We On Course?

- Typical Benchmarks:
- “Flat” serial audiograms in the “mild” hearing loss range
 - Improving speech perception measures (closed to open set; quiet to noise)
 - Closing the auditory-speech-language “gap”
 - Approximately 1 years growth in 1 years time

***See Loud & Clear! – “Clinical Red Flags”
Amy McConkey Robbins (2005)***

182

James

- C.A. 1;5
- Bilateral Simultaneous CIs
- Activated at C.A. 10 months

183

Ella

- C.A. 5;0, Right Ear: Unilateral CI at C.A. 4;6
- Left Ear: Moderate to Severe SNHL
- Hearing Aids at C.A. 3;8

184

Charlie

- Chronological Age: 7;8
- Adopted from China in October 2017 at C.A. 6;6
- Right Ear: Microtia // Ponto Soft Band at C.A. 6;10 LE: Profound SNHL

185

Nathaniel

- C.A. 3;6
- Hearing Aids at C.A. 4 months
- Moderately-severe flat bilateral sensorineural hearing loss

186

Henry

- C.A. 1; 10
- Bilateral Severe to Profound SNHL
- Binaural Hearing Aids at C.A. 4 months

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Jace

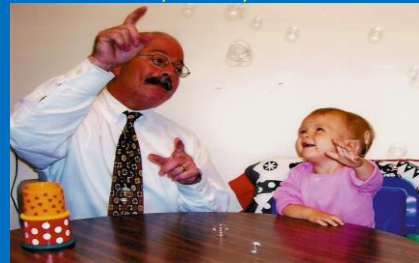
- C.A. 5;0
- Bilateral Simultaneous CIs
- Activated at C.A. 10 months

188

By Regan Brady

Listening to the Waves: Life with
Cochlear Implantswww.listeningtothewaves.com

189

The Sky Is *Truly* The Limit!

190

Break, then Small Group
Discussion

Write it down and tell somebody – What do you want to remember from this section of the course?

191

Listening and Spoken Language
Certification/Qualifications

192

The Listening and Spoken Language Specialist

- The LSL Cert. AVT and the LSL Cert. AVEEd is a voluntary, post-graduate credential that is the "Gold Standard" for demonstration of professional competence in development of listening and spoken language.
- This certification allows the public to know that the LSL professional possesses the knowledge and skills to develop listening and spoken language.



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The Listening and Spoken Language Specialist

1. Engages in a 3 to 5-year mentored experience to qualify to take the LSL certification examination (LSLS Cert. AVT/ LSL Cert. AVEEd)
2. The LSL Cert. AVT/AVEEd follows Principles of Listening and Spoken Language
3. There are nine LSL Domains of Knowledge



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AG Bell Academy for Listening and Spoken Language



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Listening and Spoken Language Certification Exam Qualifications

Eligibility Requirements to Take the Exam

- Academic: Current requirements include a professional degree (or equivalent) in the following fields: Audiology, deaf Education, or Speech-Language Pathology.
- Credential/censure: This requirement may be met prior to and/or during the 36 to 60 month certification period.
- Continuing education: Fifty percent (50%) of the required continuing education hours may be met prior to the beginning the 36 to 60 month certification period, but at least 50% of the required continuing education hours must be met during the 36 to 60 month certification period.
- A formal written description of auditory-verbal practice: This requirement must be completed during the 36 to 60 month certification period and is typically completed as part of the [application process](#).
- Professional experience: This requirement is typically met during the 36 to 60 month certification period; however, exceptions may be made for students nearing confirmation of their qualifying degree.
- Mentoring by a certified LSL Specialist: This requirement must be completed during the 36 to 60 month certification period.
- Professional and parent letters of recommendation: This requirement must be completed during the 36 to 60 month certification period and is typically completed as part of the application process.

Download the [application handbook](#) to review full details of the eligibility requirements.

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Principles of Certified LSLs Auditory-Verbal Therapists (LSLS Cert. AVT)

<https://agbellacademy.org/certification/principles-of-lsl-specialists>

- Promote early diagnosis of hearing loss in newborns, infants, toddlers, and young children, followed by immediate audiologic management and auditory-verbal therapy.
- Recommend immediate assessment and use of appropriate, state-of-the-art hearing technology to obtain maximum benefits of auditory stimulation.
- Guide and coach parents to help their child use hearing as the primary sensory modality in developing listening and spoken language.
- Guide and coach parents to become the primary facilitators of their child's listening and spoken language development through active consistent participation in individualized auditory-verbal therapy.
- Guide and coach parents to create environments that support listening for the acquisition of spoken language throughout the child's daily activities.
- Guide and coach parents to help their child integrate listening and spoken language into all aspects of the child's life.
- Guide and coach parents to use natural developmental patterns of audition, speech, language, cognition, and communication.
- Guide and coach parents to help their child self-monitor spoken language through listening.
- Administer ongoing formal and informal diagnostic assessments to develop individualized auditory-verbal treatment plans, to monitor progress and to evaluate the effectiveness of the plans for the child and family.
- Promote education in regular schools with peers who have typical hearing and with appropriate services from early childhood onwards.

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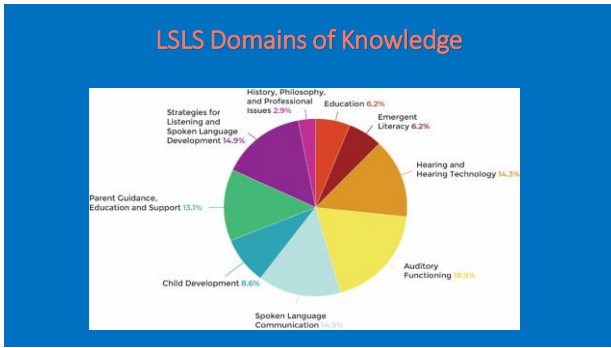
Principles of LSL Specialist Auditory-Verbal Education (LSLS Cert. AVEEd)

- A Listening and Spoken Language Educator (LSLS Cert. AVEEd) teaches children with hearing loss to listen and talk exclusively through listening and spoken language instruction.
- Promote early diagnosis of hearing loss in infants, toddlers, and young children, followed by immediate audiologic assessment and use of appropriate state-of-the-art hearing technology to ensure maximum benefits of auditory stimulation.
- Promote immediate audiologic management and development of listening and spoken language for children as their primary mode of communication.
- Create and maintain acoustically controlled environments that support listening and talking for the acquisition of spoken language throughout the child's daily activities.
- Guide and coach parents to become effective facilitators of their child's listening and spoken language development in all aspects of the child's life.
- Provide effective teaching with families and children in settings such as homes, classrooms, therapy rooms, hospitals, or clinics.
- Provide focused and individualized instruction to the child through lesson plans and classroom activities while maximizing listening and spoken language.
- Collaborate with parents and professionals to develop goals, objectives, and strategies for achieving the natural developmental patterns of audition, speech, language, cognition, and communication.
- Promote each child's ability to self-monitor spoken language through listening.
- Use diagnostic assessments to develop individualized objectives, to monitor progress, and to evaluate the effectiveness of the teaching activities.
- Promote education in regular classrooms with peers who have typical hearing, as early as possible, when the child has the skills to do so successfully.

(Adapted from the Principles originally developed by Doreen Pollack, 1970)

Adopted by the AG Bell Academy for Listening and Spoken Language, July 26, 2007.


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Exam Blueprint

- 160 Knowledge and Skills Statements
- https://agbellacademy.org/wp-content/uploads/2018/12/LSLS-Certification-Exam-Blueprint_FINAL.pdf



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Listening and Spoken Language Resources

- www.agbell.org
- www.agbellacademy.org

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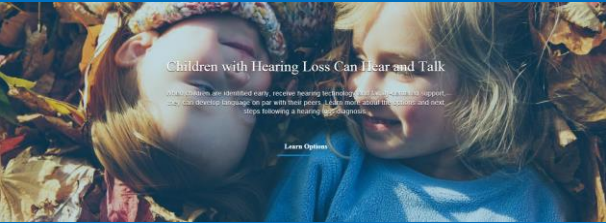
Listening and Spoken Language Resources

Resources families and professionals can readily access for information about Listening and Spoken Language and related issues are:

- AG Bell – www.agbell.org
- AG Bell Academy for Listening and Spoken Language – www.agbellacademy.org
- AG Bell International – www.agbellinternational.org
- Hearing First – www.hearingfirst.org
- Hear 2 Learn – www.hear2learn.org
- Option LSL Network – www.optionlsl.org

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What We Know




Children with Hearing Loss Can Hear and Talk

Children who are identified early, receive hearing technology, and have the right support can develop language on par with their peers. Learn more about the research and new ideas following a hearing loss diagnosis.

[Learn Options](#)

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What We Know

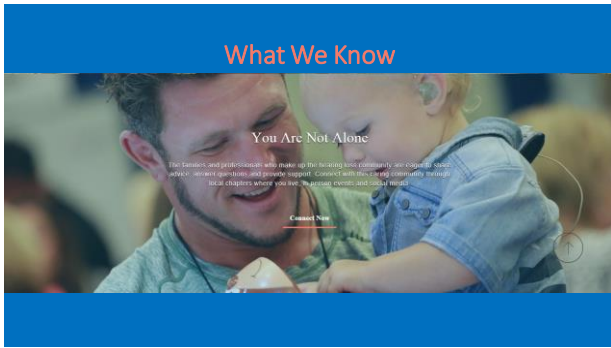


Resources to Empower Your Family

Get the inside scoop on the resources that can provide invaluable assistance during hearing loss diagnosis, assist with navigating the world of regulations, rights, and advocacy, empower you to understand your child's rights as protected and how you have access to the resources your child needs.

[Speak Up](#)

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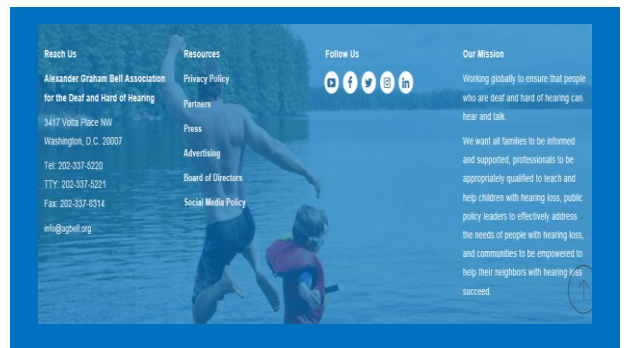
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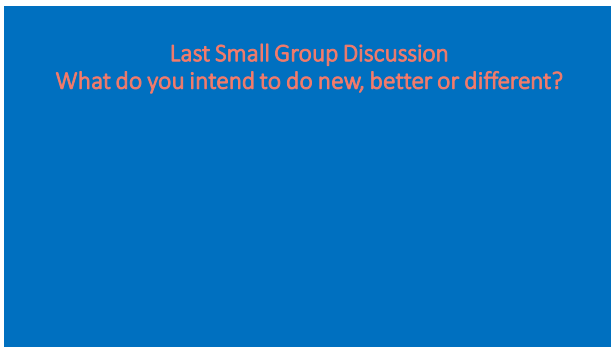
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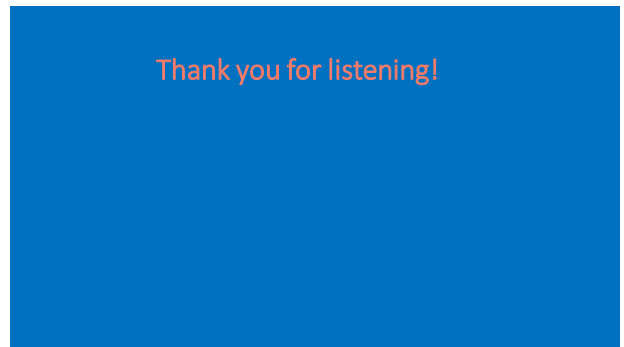
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