

Live captioning by Ai-Media

VALERI LeBEAU:

I'm just playing with the different views on the screen, so I can see everything. Let me go to my animation, to double check that it is working. OK. Are you seeing, Nichole are you able to see the animation?

NICOLE JACOBSON:

Yes, it is fine. Sound is perfect, animations look great.

VALERI LeBEAU:

Let's get to the start. OK. It looks like our Captioner is here as well.

Great.

OK, unless you need me – I can mute my microphone...

VALERI LeBEAU:

Hey Nicole, this is Valerie. Please let me know when you want to turn my camera on.

SPEAKER:

Hello everyone, welcome to today's webinar. Too, please press record. Welcome to today's webinar, this webinar is being recorded. Please note, the handouts for this presentation and can be found for download in the chat box of your screen. Today's presentation is entitled, "Hearing With Your Brain". This will be presented by Valeri LeBeau. Valeri LeBeau is a Senior Rehabilitation Program Manager at Advanced Bionics. She brings a lifetime of personal, professional expertise to the field of hearing impairments. Working as a teacher for the hearing impaired, and a speech language pathologist, she has trained, mentored, lectured locally and internationally.

Please hold your questions and comments until the end of Valerie's presentation. At that time, we will open up a question and answer box for you to present to Valeri, too responsive. Now, we will warmly welcome Valeri LeBeau to today's webinar.

VALERI LeBEAU:

Thank you, Nicole for that warm welcome. I'm excited to be here. Welcome to everyone here and our audience today, I'm excited to talk a little bit about how we hear and how hearing is not really all about our ears the words are my dear friend Carol, "it is all about your brain."

You have met me, I am Valeri LeBeau, I am the Senior Rehabilitation Program Manager Advanced Bionics. Today, what we will be talking about is how your child hears of the world. How your child

learns and understands sound. How to support auditory brain development are listening and spoken language.

But before I get started, I would like to find out who is in my audience. If you would type your answer into the chat box, I would like to know if you are a parent of a child who is newly identified with hearing loss?

Are you a parent of a child who is a candidate for cochlear implant?

Are you parent of a child who is waiting for hearing aids?. A child who wears hearing aids? Or a professional who works with families of children who have hearing loss, or if you're something else that I didn't know about, please type that into the chat box.

I will give you a moment to put that into the poll, and as soon as I see those polling results. I will share that with you.

I imagine the polling results are coming in. And again, go ahead and let us know if you are a parent of a child who is newly identified with hearing loss.

Who might be a candidate for cochlear implant, who is wearing hearing aids, who was a child -- was a part of a child who is wearing hearing aids, and a professional who works with families of children who have wearing hearing loss?

It looks like we have parents of a child who is newly identified with children who are wearing hearing aids. A working with children and families with hearing loss, as well as others in the audience. Welcome to all of you.

When we think about hearing loss, especially for those teeny wants to first identify with hearing loss, we need to think about how children learn. Children learn about the world through their senses. That is why these early years from 0-3 years old, early childhood is so important. This is one important brain connections are being made. Children explore and make sense of the world. How do they do that?

They do this by using all of their five senses. Their touching, tasting, smelling, seeing, moving, hearing. All of those senses provided -- provide important information to the brain so that child can make sense of the world and learn about the world.

When we talk about our brain, our brain is this powerhouse that assigns meaning to everything that we explore in our world. Let me begin with an analogy that my good friend Carol uses when she explains many here. She says, "think about the eyes... All of the senses, but let's choose the ice today. I are a doorway to a brain. Let's imagine you see a dog... I don't know it is a dog, all they see is something fluffy, playful, jumpy, playful thing. They do not know it is a dog. It is the brain that sees it and puts altogether and says, 'that is a dog'"

We do not see with our eyes, we actually see with our brain. It is the brain that understands what that

information is that is coming into the brain.

When we think about how we hear, the ears are the doorway to the brain for sound, spoken language, for talking, singing, reading. We here with the brain, not with our ears. When you think about listening, spoken language development, let's consider these facts.

Unlike any other organ in the brain – the brain is unlike any other organ in your body. The brain is not fully developed when the child is born. Brain development is completely dependent on environmental experiences. Again, remember, children learn about the world using their five senses. Those experiences are really going to shape how they learn. In order for the child to be ready for school, a child with hearing loss needs to hear approximately 45 million words by the age of 40 years old. -- 4 years old.

Even more important, they need that true, back and forth of exchanges. They need to be engaged, with both periods or the caregivers and those parental conversations with the child actually influence the biological growth of the brain.

What we do is the extensive auditory practice in favorable listening conditions. It creates the foundation, not only for language and literacy skills but also for age-appropriate social and cognitive skills. That is why in the first three years of life, the foundation for all thinking and learning is being built to pair talk interaction. -- Parent.

Today we are going to talk about how your child hears the world.

When we think about the human ear, the human ear is this amazing organ that can really process everything that we hear in the world. So, what I just showed you is what normal hearing looks like. Sound is gathered by the outer ear, sent to the auditory canal where it hits the eardrum, which then vibrates. That vibration is transmitted into the ossicular chain and then enters the cochlea. In the cochlea, the vibration creates and wave that excites themselves, transmits that signals of the auditory nerve, all the way up to the brain.

When we think about hearing loss, what does that mean? Hearing loss is what we call "doorway problem". The deer is the doorway to the brain. That doorway is broken. If we think about that year as the doorway to the brain for sound, foreign language – a hearing loss of any type/degree obstructs that doorway. It prevents that auditory information from reaching the brain.

What can we do?

Hearing aids and cochlear implants or other types of hearing technology breakthrough that doorway to allow access and stimulation, development of the auditory neural pathways.

So, when we hear – I think of hearing loss as a doorway problem, the purpose of hearing technology is to get sound, when we think about that, it is about auditory information, to the doorway all the way up to the brain.

In Advanced Bionics, we are working every day to ensure that each child's unique hearing needs are met. It is specifically designed for children to share in all of the different places that they play and learn.

Let's take a look at what happens when there is a doorway issue called a hearing loss. In this case, conductive hearing loss. When a child suffers from a hearing loss, there is one part of the chain that releases sound and it does not function adequately. It would be a doorway problem. In the case of a conductive loss, sounds cannot get to the middle ear. That is that area out there it is highlighted on my slide, the red area, eardrum and ossicular chain which is the (unknown term), where it travels up to the cochlea into the brain. This is what we call a conductive hearing loss.

The sound makes its way all the way up to the cochlea, and the cochlea is made up of thousands of hair cells. Their only function is to relay the sound function into the brain. Term too -- in terms too long sounds over time, it can make it difficult for cells to go through. There is a doorway problem, here, to make it difficult for those sounds to get to the brain. This is what we call a sensorineural hearing loss.

So, how do we talk about hearing loss? All levels of hearing loss is noted on an audiogram. An audiologist creates an audiogram when you go for a hearing test with your child, and this is a universal graph for audiologists and doctors, therapists, to all understand each other. The X axis symbolizes the pitch of the sound, and it goes from low, growling sounds to higher pitches like birds singing. The Y axis identifies how loud the sound is to be in order for you to hear.

The more you move to the bottom of the graph, the louder the sounds get.

On the audiogram, we can notate different types of hearing loss from normal hearing, mild hearing, moderate hearing, moderate severe hearing loss, severe hearing loss, and profound hearing loss.

So, not all sounds are made the same intensity to be made to be heard, depending on the need of hearing loss. There's a speech banana, on the audiogram, which is a banana shaped range that covers the frequency and (unknown term) that are needed to understand speech.

This is an excellent tool for you to understand what sounds, speech sounds can hear, and which sounds are difficult and are missing from your child's hearing. When you look at the audiogram, you may see red symbols that look like this. Those red symbols, symbolizing the right ear. The way I remember is that red starts with R, and red, letter -- right here. -- Right ear.

If we look at the audiogram, you see the symbols. Those classes symbolize the last year. This is a severe hearing loss. Based on the audiogram that you see here, this child will be able to hear all of the sounds that fell below the red and blue line. For example, they may hear a dog barking in the right ear, but not on their left ear. They will be missing out on all of the important speeches as if they don't have any device that has application. Having access to the important speech sounds is vital in the acquisition of -- development of spoken language.

Hearing aids and cochlear implants break through the doorway to deliver sound and speech to the brain. A child may wear hearing aids if they have a conductive hearing loss, and less severe neural hearing losses. If the child has the most profound hearing loss, profound hearing loss – they may not be able to use hearing is. It may not give them enough sounds to get the sound through the doorway and up to the brain. They may be a candidate for a cochlear implant.

When you look at hearing aids, what is the difference between a hearing aid and a cochlear implant? A hearing aid makes sounds louder. Hearing aids are sophisticated speakers, it makes sounds of letters, specifically that are matched to the type of hearing loss that someone has. To really visualize this, think about this. Sometimes, making something louder or bigger, doesn't always make it clearer or easier to understand. When a hearing loss is too important, hearing aids are made -- may not be sufficient enough to allow enough sound to get back to that -- brain.

I want you to look at this picture. Can you type in what is in the picture of that bubble?

You can see, when we think about a hearing aid, and make something bigger and closer, but it doesn't always mean clearer. That is one way to think about that, when we think about hearing aids. When we think about cochlear implant, when a child, hearing aids are not strong enough to make that sound as clear as it needs to be and to break through that door way to get to the brain, this is sometimes on the audiologist might say, the child is a candidate for cochlear implant. This may be when the cochlear implant is a better solution. It is made of two parts. Internal part, which is called the infant, and external part which is the sound processor.

The microphone picks up the sound of the environment, and the sound processor transfers information and sends it across the skin through the implant, and releases the information to the nerve via electrodes. It completely bypasses normal pathways of sound to create a new one. Then the brain can hear.

So, whether a child wears hearing aid, clear implant, some kind of other hearing technology – the question becomes, how do babies brains make sense of the auditory information that they are hearing? Babies learn through experiences with the world, using their senses. They learn with listening, spoken language, to repeat language interactions and experiences with their caregiver. The caregiver will give the interaction earlier that is so important for brain development.

Parents, what can you do? Parents can help their child make sense of sounds around them, talking, reading, singing. This builds babies brainstorming -- listening, language, literacy. For those families who choose language, it is the mode of medication for the babies.

A child's ability to learn to listen, talk, read, saying, is intended (?)

What can adults -- parents do to support auditory brain development?

If you're a parent, you can talk, read, sing with your child. I want to tell you about an important study, hearing was called the OC HL study. Credited is that it looks with children with hearing loss identify

what we can do to reduce the risk of delays in language development. The first recommendation was for all the babies to have well fit technology.

Hearing aids need to be worn at least 10 hours per day.

That is the first thing that you do. Make sure that your hearing technology is on the child, all waking hours. The second thing is, we need to provide language rich interactions with your child.

You might be wondering, "well, it is hard to keep hearing aids on my baby. They keep taking it off. I don't feel qualified to know how to have these language rich interactions with my child."

Before I talk to you a little bit about how you can do that, I want to ask if you have ever considered music, which can help you accomplish both of these things. What kind of musical activities do you do with your child?

Number one – we don't use music.

Number two – instruments.

Number three – singing.

Number four – other.

Please take a few minutes to fill out that Zoom poll. Let's take a minute, and as soon as those polling results come through, I will ask to show those to me on my screen.

OK. We will take another second.

Let's see the poll. Some people are using instruments. Well, most

of half of you are using singing. That is fabulous!

This is great.

What I want to share with you today, is that music is one way that you can help keep hearing aids on little ones years, and their cochlear implants or other hearing technology.

It is a way to create these language rich interactions. If you work with parents of children who are newly identified with hearing loss, we are hearing aids, and they're waiting for a cochlear implant or they have a cochlear implant – or if you are parent who was a child is newly identified with hearing loss. I want to share with you, something free that is going to really help you to bond play and learn with your child. It is called the Baby Beats App. With the Baby Beats App it is intended to help guide parents to use physical activity to create those language rich interactions with the child.

Many parents who use this app, made it easy to keep the hearing aids on the child. There interacting and doing fun activities. You as a. Gets to see how your child reacts to sound. It is an exciting milestone to be able to really witness – the witness to. It is not springtime, it is an app that have instructional videos for babies and toddlers. There are music playlist, transportation/animal picture cards, and also something called "notes", for the professionals. You can go in and ask for a copy of the notes to be emailed to you from the app. As a parent, you can do the same.

As you play with Baby Beats, it will guide you with activities to promote interactions and for you to have fun as a parent. You don't have to be an expert, the videos get you started and everything is in the app for you to get started today. The best part is, it is free and it is in Spanish, if you know any Spanish speaking families. This is our gift to you, and you can download it today for free, with your Google and Apple play store. They start exploring those activities, and in these activities, it was developed specifically for babies, toddlers, for hearing loss with -- by an expert. To encourage again, it is for child, parent interactions, that are developmentally important for baby or toddler. It is to build that foundation for early listening and communication skills, beginning in those very preverbal pages before children are using words. When you are first identified with hearing loss, or waking -- waiting for cochlear implants.

I hope you will go and download this app today and start using this with your baby. This brings us to the conclusion, and if you have any questions, please type those into the chat. The call will read those to me. -- McCall will be those to me. If you and and you think of additional questions after the webinar, please reach out to your cochlear implant consumer specialist, and if you don't have an or do not know who that is, please email me at [hear@advancedbionics.com](mailto:hear@advancedbionics.com).

I look forward to hearing from you. Nicole, do you have any questions in the check?

NICOLE JACOBSON:

Megan is asking me if you can repeat the name of the app.

VALERI LeBEAU:

It is called the Baby Beats App.

It is found in your Google play, Apple iOS -- store.

Any other questions?

NICOLE JACOBSON:

Valerie, we have a question saying, "Will the act only be free to us today or can we give the information to parents and they will be able to access the app for free as well?"

VALERI LeBEAU:

Absolutely. Thank you so much. Great question. This app is always free. Whenever you go into the app store, please share it with your families at your next session. You can help them download the app

and you consent to go in and it is a free app that is always available to your families. If you have any families who speak Spanish, it is also available in Spanish as well. Thank you for that question, and I hope you have fun exploring this app with your families.

NICOLE JACOBSON:

Valerie, I see some. Baby Beats is fabulous and so easy to use for professionals and parents! She is very enthusiastic about that.

VALERI LeBEAU:

Thank you Jennifer. I'm glad you had fun using that with parents and families. For you, who are new to the app, the videos are there, and I go back and watch the videos to do the activity. Then they can do the activity at home with their babies as well.

NICOLE JACOBSON:

We have any other questions?

This is an appropriate app to use with children who do not have hearing impairments?

VALERI LeBEAU:

It absolutely is. In fact, my sister had a baby, and I said "you need to download this app and use it with your little one. It is great for all children." It was especially developed for children with hearing loss. But, with that said, I think for any child might be an early childhood program or if you are a parent at home who has a little one, it is easy to use. Feel free to use it with all children, I think it is beneficial for all children.

NICOLE JACOBSON:

We do want to say, thank you so much for the formative -- thank you so much for an informative presentation. Thank you to our Captioner, and everyone participating today. A video recording will be available on our website@heretolearn.org. Our next to learn webinar will be held on January 14. The presentation will be entitled "Building Play Skills after an Air of Social Distancing". The close of the session, you will be provided to complete a brief survey to help improve future webinars, and complete a certificate of completion with attending today's webinar. Thank you for participating today's webinar, and hopefully to see you back at the next one. Thank you, Valeri.

VALERI LeBEAU:

Thank you for having me. Have a great weekend, everyone.

Live captioning by Ai-Media