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Auditory Skills: A Closer Look

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ASHLEY: Great. I would like to, once again, welcome everyone for joining us this afternoon. For Cochlear America's on-line session, "Auditory Skills: A Closer Look" My name is Ashley Garber. I'll tell you a little bit more about myself in just a minute.

As we go through the day, just a quick reminder again, if you'd like to go ahead and download your handout and perhaps print that to have for your use during today's presentation, you'll find the handout over on the

left-hand side of your screen in the file share pod. Click on that and you'll be led through saving that to your screen.

So let's go ahead and get started. First I'll welcome you on behalf of Cochlear America. Donna Sorkin, vice president for consumer affairs, often joins us at this point to welcome you. She is not able to be with us today. I know that she would want you to know that we're very pleased to be on our third season now of on-line sessions for educators, speech language pathologists, teachers, and audiologists in the schools, particularly all settings, actually, for professionals working with children with cochlear implants.

Today's session is a continuation of one that I did -- actually, we've done it two seasons in a row now with Mary Ellen Nevins, and we provided for you today a bit of an update and a more intermediate presentation to continue with the thoughts that hopefully you learned from that first presentation.

I'm on my own today. I will introduce myself. I'm a speech language pathologist practicing in Michigan in private practice. I specialize in auditory verbal therapy and other family centered rehab services. I have 12 years of experience working with children and adults with hearing impairment and cochlear implants, with some people in the cochlear implant program in Michigan. I think I see a few fellow Michiganans in the audience today.

Let me start by talking about what we'll orient you to today. First of all, I am going to review the model for auditory development that Mary Ellen

and I came up with back last year or two years ago. We'll review that relatively quickly, but just to orient you to the rest of the information that I'll share with you as we go along. After that, we'll talk specifically about some subskills for auditory development that we didn't discuss in that first session. So you'll have some more specific information regarding subskills of auditory development that you can focus in on in your work.

And then we'll look at some techniques for maximizing development of those auditory skills and I'll share with you some pages from my case files on children that I've worked with and by way of giving you some examples for that.

At the end, hopefully we'll have some time for discussion. I would welcome you to go ahead and type in any question that you have for me in the chat area. I'll see that as I go along. I'll try and save those probably until the end just as it gets a little confusing with all the things that we're manipulating here. But if something does come up that's appropriate to stop for, we'll certainly do that.

So let me go ahead and just review for you the model of auditory skill development that Mary Ellen Nevins and I presented to you in our program called getting started with auditory skills. We described three parameters to consider for auditory development, the first being auditory function, the second, meaningful input, and the third situational context. I'll through each of those for you briefly.

Auditory function would be those skills that we're looking for. The first skill,

the base skill would be detection, which means demonstrating an awareness of a particular sound or sounds, moving towards discrimination so that a child is making judgments between two sounds as to whether they're similar or different. Patterning would be recognizing features of rate, duration, intensity, and pitch. Identifying is now specifically indicating what's been heard. A child might do that through a motor response, like pointing to an object or a picture, or perhaps through a speech response such as imitation.

And then, of course, the highest level skill and what we're driving for with all of our children in terms of their auditory skill development is comprehension. That is understanding a particular input. And the child might show this through a response to a question or by generation of new ideas. Continuing your thought.

The second parameter is, of course, the type of input that we give to the child. Listed for you here, of course, from most basic to most complex: Sounds, speech sounds and environmental sounds, words, phrases, sentences, and conversation.

The third parameter, and one that we think is specific to our model, not that other professionals haven't described this, but haven't sort of maybe visualized it relative to the other parameters, and that is the parameter of situational contexts. I'll spend just a few minutes more on this area, because it is where we'll spend much of our talking, much of our discussion today.

The first and most basic situational context that we will present to a child would be a structured listening task. So that would be a specific activity that we've designed in order to practice our auditory skills. Structure tasks, of course, mostly we'll think about setting at a table to work in a very structured fashion. We might start at the most basic level, being a closed set task. And this is one where we're asking the child to make discriminations or identify something. And we're giving them all of the choices that they might hear. All of the choices are available to them visually.

So for example, you might have four objects and you're asking the child to identify one of those. Where is the stapler? Where is the tape? There might be four things on the table. That's a closed set task.

Whereas a bridge set task is one that will move towards the higher level of the open set task. So just to contrast quickly, the closed setting the choices available versus the open set where all of the possibilities for stimuli are endless. So the same task where you're asking a child to identify what they've heard, where is the stapler, in that case, in the open set case, there is nothing visibly visual or visible to the child for them to select. So they have an open set of possibilities.

The bridge set is there to move between the two. So what we do in that case is perhaps make a larger set. It's still a closed set, but perhaps not a visible set. So we could say to the child, I'm thinking of something that we use at school. Something that you use for crafts. And then you may say, tape, stapler, markers. These things, there's a cognitive set that's created

by telling the child what to think of, but nothing's visible to them. So that's an example of a bridge set that moves the child from a closed set task towards the more difficult open set task.

Now, I've defined those for you under structured listening tasks, because I think that's the first place that we see those, but of course an open set, bridge set and an open set both can be used very easily in routine activities, as well as a naturalistic exchange. So keep that in mind as we describe each of these.

Routine activities are, of course, those recurring events in a child's life that are associated with predictable language. So less structured, but yet predictable for a child. So a routine activity in a preschooler's day might be the ride to school. Might be sort of the welcome activities at school, putting their backpack away, put are their coat away, story time, snack time. These are those events that happen every day and become very predictable to the child.

Whereas naturalistic exchanges, again, the ultimate goal for us, what we're hoping a child will develop confidence and skill is in using their auditory skills within a naturalistic exchange where we've perhaps something might be goal oriented, but it's a real world conversation where the child's ability to listen is going to transcend the environment or the activity.

So for example, we might be very confident that a child understands the phrase go get your coat if we're presenting it not at the end of the day or at recess time, but in the middle of snack time. That's a time when we've

taken something outside of the routine and we're just having a conversation and we know that they understand that, because it's outside of that routine.

So just look at the different situational context that we will present as we move a child through their auditory skill development. So what I'd like to do for you now is I've described each of those things, but I'd like to put it together for you in a model so that we can keep that in mind as we work through our program. So as we build the model together, we are going to put emphasis on auditory function, but we don't want that to override best practice principles for language development so that remembering that auditory function is moving from detection through comprehension, and that's, of course, very important, but we want to make sure that we're not overriding the best practice for language development. They're going to call for us to work both top down and through a bottom up approach.

So in other words, auditory function is going to develop from the most basic skill of detection to the most advanced skill of comprehension, but we want to be using input that is varied across all elements, from sounds to conversation and conversation to sound. That is sort of a concern that I have with many of the auditory curriculum that are available in that skills are listed in a vertical fashion from the top of the page to the bottom with the top skill that a child is to achieve being detection of environmental sounds and moving down with the very last skill as comprehension of conversation. And everything is very linear in between. And I would like to suggest, and if we look at this model that Mary Ellen and I put together, we really have our skills presented a little bit more horizontally so that you can

see that we can work between the areas while we'll work from left to right on the model, from awareness to comprehension, we can work on awareness of sounds and awareness of conversation at the same time, and as soon as we have some progress in that area in a structured environment, we quickly move and look for that skill in routine and naturalistic settings. So we can be working across modalities.

Let me see if I can use this here to make myself a bit more clear. We can be working on awareness of sounds, sentences, conversation at the same time, and as soon as the child is aware, of course, we need detection first, but as soon as a child is able to do that, we can quickly begin looking at can they tell the difference between particular sounds and are they able to discriminate when conversation has begun and ended? Can they pattern singing? Can they begin to do that? So very quickly, we can begin working on several goals at the same time and not feel that we have to work on one goal, one goal, one goal, one function.

Oh again, common practice follows that notion, that auditory notion develops first and structured task and then moves to naturalistic context, but because of the power of the cochlear implant, we now see that auditory skill development is possible in more naturalistic environment from very early on. So we don't have to, going back to our model, we don't have to work at each skill individually in a structured situation, structured, structured, structured, before we take things to the routine and to a natural setting. We can begin from the very beginning looking for a child to be aware of conversation, aware of conversation in a natural setting. We think we can do that from the very beginning. So that's sort of the

difference perhaps in our model or our discussion of the auditory model is all information that has been out there for sometime, but we're looking at that in just a slightly different way and throwing situational context in there for our thoughts as well.

Now I'd like to go through some of the subskills, because these weren't mentioned in our original presentation on auditory skill development. And as you get working with your children, then you're going to want to have some specific subskills to look at for each child. Now, what I've done is organized these by meaningful content, meaningful input, so the first level, of course, is the sound level. Our input at the sound level. And I've given you some detection skills, some identification subskills, and some comprehension subskills. And what isn't overlaid on this is that area of context. And so we want to keep in mind that throughout the progression of these skills, we will be exposing the child to these different targets in a structured setting, as well as in a naturalistic setting to see how they do in those areas.

So the first, just to go through these a little bit, detection subskills at the sound level would be, first we're looking for awareness of environmental sounds and also awareness of speech, both loud speech and whispered speech to show that they can identify sounds, we will look for them to imitate speech sounds. Vowels and diphthongs, consonants differing by manner, place, or voice cues. And comprehension skills in the area of sound level would be responding appropriately to environmental sounds. That might be a goal that you target. So we know that the child understands the sound by how they respond to that sound when they hear

it.

If the telephone rings, for example, not just pointing at the telephone, but going to answer it or pointing to mom for her to go to answer it would indicate that the child understands that.

At the word level, some of our subskills in patterning might be marking syllable number and word imitations. For the function of identification, identifying learning to listen sounds identifying a keyword at the beginning of a sound phrase or sentence. Once we do that, we would like to see them find a word at the beginning or middle, with middle being the most complex of those three choices. The end is easiest. The beginning and the middle was the most difficult.

Identifying key words that differ by syllables number. Words that differ by vowel and consonant features, official consonants only, and final consonants. So those are some identification subskills when it comes to word level.

Comprehension, some of those subskills might be understanding key words in a phrase or sentence. Understanding words in new context. So in this case, we are imposing that situational context on there. So we want to see that a child not only responds to a word, but responds to a new place. This is something that my nine month old I'm just seeing now. I know that he recognizes words, because when I say them to him, he gets a nice smile on his face, but I also know that he doesn't fully understand words, because he only knows lion and he looks at his mobile. He doesn't

look around for his lion toy. He doesn't apply it to many things. So our children with hearing impairment, we want to help them do the same thing, to expand their recognition of words and their understanding related to one thing of the we want to begin to apply it to new contexts as well.

Learning new vocabulary words, of course, is a comprehension skill at the word level: When it comes to phrase and sentence input, we might have discrimination and patterning subskills such as noting differences between short and long sentences or noting question inflection and tone of voice. Those are patterning and discrimination skills. Identification subskills would be things like recognizing and responding to stereotypical phrases or calling two key words in a message, calling three key words, so moving with more difficulty, repeating sentences with high predictability. So again, we just recall that we haven't put on top of that, we haven't overlaid our situational context, but of course any of these goals would be appropriate to look at in routine situations and natural situations, as well as in a structured environment. So very quickly we can begin doing that. We don't want to limit ourselves to what the child can do in the therapy room. We want to make sure that we're addressing these goals across different contexts in the classroom and at home.

Comprehension subskills with our sentence and phrase input might be completing a linguistic message from a closed set. A quick example of this, just to make this more clear, would be, for example, the phrase close the, fill in the blank. Now, a closed set, one example of a way that you would target that skill would be, for example, reading a story and in the story the mom, you know, the mother or a character tells a child to do

different things, so you might have some pictures available from the story that would show the person closing the door versus closing their backpack or closing their lunch box or doing different things. And so if you've given them a linguistic message and you make it a fill in the blank, that way they have choices that they're making that are visible to them versus if we look down the list hierarchically, completing a known linguistic message, auditory closure in an open set where we don't give them that visual choice.

So again, we've built in a little bit in some of our goal writing here, we've built in a little bit of that situational context, moving from the closed set to the open set where we're looking for that to actually occur in an open set. But in both of those cases, we can look for that skill in a structured setting, as well as in a naturalistic setting once we know they have it in a structured way.

Again, just moving through some of these, answering questions about a picture, following directions with four or more elements, answering questions about a familiar topic, but one that the child hasn't been told about beforehand.

And last but not least, we have some sub skills for the conversation level of input. Detection subskills would just be alert to go continued speech and knowing when it stops. This, of course, is a very important goal so that a child knows when it's their turn to talk. When does conversation begin and when does it end? For identification and patterning, recognizing nursery songs and rhymes. Very young children are doing that by doing hand

motions that go along with it. Making the little spider when they hear the tune to its I bitty spider. Comprehension subskills, answering common questions, following a short story with picture cues. And then identifying a picture for part of that story. Identifying an object when given descriptors. Again, this is something that we start in the closed set. So we may have, you know, a book with several objects and you play I spy and say I spy something that has wheels and four doors and the child has pictures of a car and a truck and a motorcycle and a helicopter, and they can select from that the car based on the description. Whereas in the open set, the same task without any pictures to work from would be what you're looking for in an open set.

Answering questions about a short story, recalling events in a story, or following a conversation about a topic that hasn't been discussed ahead of time or described ahead of time. So all of those are suck skills for -- subskills for the areas that we mentioned before. Now, the one main point, if you take nothing away from today or nothing new, other than this idea, I would like you to really consider that these skills, these are skills to be developed and observed rather than tasks that we want to test a child on or activities that we're going to have them do.

I actually had a discussion with another professional who wasn't comfortable with goals that were written for a very young child that said identify, you know, a discriminator, identify a word based on differing consonants or vowels. And she said, you know, how is this child going to pick a picture that shows that she knows what word they've said? Well, and the point is that a very young child isn't going to indicate a picture with

their finger. They're going to imitate that word and imitate in a way that shows me that they have discriminated the vowel or the consonant that he used or not. So they may imitate the word and match my consonants and vowels, or they may imitate the word and not match those. Or they may show no recognition of what I've said at all, which shows me that they don't have any identification skills nor any comprehension of the word.

So I'm really thinking that these are not goals, that they are not tasks to do, but things that we want to observe and to develop in a child. I think it will really help us to look at these skills as goals to be generalized and to the child's auditory personality and to their day and to their real world versus an activity that we do. Again, I think the fault of some of the curriculums that are out there for auditory skill development really focus on selection of objects or pictures from a closed set and don't take as much further from that. So thinking of those as skills that we're going to develop perhaps will help us in that, our own goal of generalization for the child.

So with that in mind, I think we're moving along pretty well so that we can talk now about techniques for maximizing success. So I've picked out just a few techniques to describe to you or to talk about with you that will help us to maximize a child's progression through the auditory skills that we're targeting with them. And the first would be to think about, for any task that you do, even the most structured task, to really create a conversational framework for that activity. And this is something that someone talked with me about. I'm not sure if she came up with this idea herself. She may have learned it from someone else. But she's the one that I'll credit with having me think more about it. And that would be to provide a framework

for an activity that gives a context and insures that the game makes sense to the child. Even if we're playing a very structured game, and we'll just use, perhaps, a Lotto game or something like that, if we're playing that very structured kind of a game, giving some description of why we're doing that in the first place so that it makes sense to the child.

And with that framework, we can make some targets for receptive and expressive language development. Very easily integrated into that. So if we give it a framework, that will allow to build language into the auditory goals that we're targeting so that we're hitting two things at once, which is, you know, of course the best way for us to get the most bang for our buck out of short sessions and limited time is targeting our auditory skills and our language development and is, of course, the best way for generalization for children as well.

So as we do this, keep in mind the following questions: First of all, why would the child want to play with the toys that you've presented to them? Sometimes the idea of playing a game or the competition of the game is enough, but sometimes it isn't. And so why would a child want to play with the toys that you've provided? And secondly, how will you allow the child to play with the toys that you've provided?

So for example, if we're going to use the farm today. A nice kind of, you know, cliché activity for a preschool child, the farm and farm animals. I'll use that example throughout several of our techniques as we go along. So if we use that and we pull out a barn and we put it on the table and we say, let's play with this barn. That isn't quite enough to allow the child to know

how they will be able to play with the toys. If you say, "Let's play with this barn," The child can do anything he or she wants to do with the barn. You haven't told him or her anything differently than that.

So using some language in a story perhaps will help them to know what we're going to do. So for example, moving just quickly to the second example there, "Oh, no, poor farmer brown. He was driving his animals to the barn, but they got away. Let's help him find the one he's looking for and put it in his truck."

So we've given the child a little bits of an idea of how they'll be able to play with the toys. We're going to look for specific animals and we're going to put them in the truck. So they are playing. They're doing something fun, but the child will know kind of what's expected. And then with this example, perhaps we're going to describe the animal we're looking for. That would be comprehension, maybe identifying an object from a description.

The same activity, we could be using closed set and only naming the activity. Farmer brown whispers to the child, "Where's my pig?" And the child looks for the pig from a closed set of animals, from a small group of animals that's somewhere else on the table. And the other child finds the pig and puts it in the truck.

So you can see that just providing that conversational framework, you know, maybe the child doesn't understand all of this language, but he sees that people have conversations and things happen and the farmer can, you

know, the farmer is the one that's talking when he gives the description. So you're giving the child a framework and you're starting from someplace.

For a younger child, the first approximately, "Oh, listen, I hear something." Maybe you have a bag of toys or a box of toys and you're shaking that. So you've done your awareness activity. "I hear something. Listen." (Shakes head.) shake. There's lots of things in here. Let's take one out. Let's get just one, and take a toy out and play with your learning to listen toys or whatever is in your box. So just a simple description of what's happening beforehand.

I think the first one is something that we're all, you know, probably it's very natural to us, but more description than that sometimes isn't -- you know, we get out our toys and we know what's going to be fun, because we've got the idea in mind, but sort of creating a little story around it and what's going to happen is a good way to get the child interested, keep them on task a little bit more, and also to build inner language goals.

"Would you look at this? All of my animal toys got mixed up together. Will you help me find the ones that you'd see on a farm?" Once they've chosen maybe one from that Category, that's building in your auditory skill of -- you're looking for things that fit in the Category there. "Oops, you forgot one. It has black and white spots." Now there's a descriptor with two elements you can fit in there. It's a very conversational way to fit in your auditory goals with your activity.

Now, another technique, and the one we'll spend the most time on, is

manipulation of variables. And this is really something to think about, because our activities don't always -- the child isn't always ready for the goal that we've set or, you know, maybe is doing very, very well and things need to be a little bit harder. So if we are thinking ahead of time about how to manipulate the variables related to the setting that you've provided for the game or we could say the situation, the materials that are used and to the spoken stimulus or the input, if we can know to manipulate that ahead of time or how we can manipulate that, we can affect a change in the child's performance of the so if a child isn't successful with the way that they first approach the task, then modifying it can help the child to achieve the goal that you've set, whereas if they're moving very quickly through an activity that's very easy for them, we can do some things to make it more difficult so that we're now challenging them again and we don't have to wait until the next section to make things more difficult or more challenging for them. And we'll be moving them to a new level more quickly.

And really, to be best prepared, we want to consider these things before we've even begun the activity so that we have in mind within a particular activity what the next goal ahead would be and how we can use that activity to get ahead if need and had also what the step before would be. If things are too difficult, we can step back and make things a little more easier so the child is feeling more success before we move forward again.

So let's take each of those areas, setting, materials, spoken stimulus or input, and look at how we could modify each of those things.

For example, the setting. First of all, we might introduce materials before

we begin the activity or maybe we would bring things out only once we started. So really what this implies is we're showing the toys that we're going to use beforehand, which would be easier than describing things and then bringing them out. Playing in an unstructured fashion or sitting down to do work. So again, we have more of a play activity versus a structured activity. I find that I really use this quite a bit if I've planned an unstructured activity and things are getting a little nutty and the child is really not getting it and goes off task a bit in terms of what they're understanding or what they're not understanding and then are having trouble with my task, then sometimes we'll gather my toys, pull everything together on the floor, and do a quick closed set activity to make sure that they've got the vocabulary and, you know, they're understanding the words that I'm using and are able to identify those things before they get spread out again into a grocery store, that maybe we're shopping and I was trying to get memory for two or three items, bringing it back down to a closed set or a structured task quickly would allow to move back to a more unstructured type of activity than I had originally planned, like shopping from a grocery store.

If we are going to address goals in a one on one session only or within the classroom setting, whether we're ready for that generalization or whether we need to move things back to just the wasn't on -- just the one on one setting. So these are some examples. And this manipulating the setting is one very powerful tool to ensure generalization of skills. We want to move things as quickly as possible to the natural context, but we need to be able to manipulate that variable to our advantage. So that's one thing to keep in mind.

We can also manipulate the materials that we use. We can increase or decrease the size of a set. So if we're still working on a closed set, we can start with a small closed set, make it larger, go to a bridge set or to an open set. If we've started with an open set, we can, of course, quickly move backwards to a bridge set or a small set relative to how the child is doing. If it's far too difficult with the open set and the child is experiencing no success, you may want to scale it back and use a closed set or a large -- closed set, perhaps, would be something the child would feel more success so that they are able to then move from that point.

You can also, within the closed set, for example, we can create a set that includes foils or those that require more cognitive consideration, more thought, so that we're still, perhaps, using a closed set, but things are not too baby-ish or too easy. And I'll give you a visual example of that in just a minute to make that a little bit more clear.

The same thing with using only objects that are familiar to a child. Or we should say targets, because we may be using this open set or, excuse me, from a bridge set that's not visual, but you know, using topics or categories that are familiar to the child or using new toys for known vocabulary. So thinking about some different things that you can manipulate in that way.

So let's look, first, at the idea of changing the set size. So in this example, we have got four farm animals that the child is going to perhaps think we could be looking at identification of an object and just for purposes of our slide show, of course, I'm using pictures that would be on the table or up around the room or something of that nature. So here we have a closed

set. If that's too easy for the child, adding some more pictures quickly makes it more difficult and they are able to move forward in their auditory skill development.

By the same token, if you started with this large set and things are too complicated and you take a few away so that you have less things to choose from, so that's just a quick and easy example of changing the set size to help a child move forward or scale back just a little bit.

And here I've given you an example of changing the makeup of a set so that there are more foils. So if here we don't only have farm animals. We have all things that are found on a farm, but they're not only animals. So this, in some cases, could be easier for a child, because perhaps you've been giving them to -- if you're describing an object for them to choose from you say it's an animal, then they've quickly -- they can eliminate four of the choices and then you describe the particular animal that you're looking for.

So this can work together ways to make it a little bit easier or a little bit harder. If you just say it's something that you find on a farm is the first descriptor, all of the objects are still in play for them. And then you give something more specific. So changing the makeup of the set is another way to just manipulate the objects or the materials that we are using to go make things harder, more difficult, more complex, or more thought provoking for the child.

And here, again, using the limited, I guess, venue that I can use for our slides, which of these things is going to be the most familiar to your child?

Of course we've got all ducks here, but, you know, maybe we're working with an older child that still has limited auditory skills and we're doing an identification task of animals. We could use the duck, the webbed feet for the older child to give them more opportunity to think, if not to identify the duck from the footprints instead of from this very baby-ish rubber ducky over here. For a very young child, using the rubber ducky and the actual object is much more appropriate than using a black and white drawing of a duck or even perhaps a real picture. Definitely more appropriate than using the feet. So just an example there of ways that you can modify your materials to make things more challenging or easier and more -- allowing more success, depending on how your child is doing with the goal that you've set for them.

Let's move now to modifying the stimulus or the input that you're using. I want to purposely use the word stimulus, just because, you know, it is input, of course, is what we're talking about here, but now we want to talk about how we're presenting that input. And really, what comes into play here is acoustic highlighting to a great degree. Whether we're going to change our rate of speech, use more pauses, change the intensity of our voice or repeat more or less to, again, thinking about making things more challenging for a child or assisting them in becoming more successful so that they can move forward.

I'd like to think about, you know, where we can think about a recipe here. If we've got a goal in mind, a cake, a nice cake at the end, to get the cake to taste just the way that we want to, sometimes we're going to add a little more salt and a little more sugar and other times we taste it and we say,

you know what? This would be better if I took some of that out. So changing our variables. Manipulating our variables will get us to what we wanted. So in this case, the stimulus, how we're going to present the input. Again, if we're presenting a sentence, we may use more pauses the second time that we present it because the first time the child seems to get nothing from the sentence that we used. So we may chunk the sentence into a few word phrases that would help the child to process a little bit better and be more successful. We might repeat the sentence that we said, just the way we did the first time, to give them another opportunity to listen. Or perhaps we'll repeat it with changing some things. So these are all some things that you can do to help the child get through the task more effectively.

We might use more descriptive language if the child is ready for a challenge, or we might limit the length of our utterance if we're trying to help them along. Perhaps we begin the task by alerting the child to listen and then using more simple language, or we might converse very naturally so that the child is immediately, you know, needing to listen to everything, to jump right in. So those are ways that we might vary our stimulus.

So back to our farm animals here. And again, using a very simple to illustrate goal of identification, "Where's the duck? Where is ... the duck?" Adding the pause puts more emphasis on the last word. Perhaps we might want to say, "Where is the duck" To use your voice to emphasize. If that's too easy when I we've done the first couple of items that way, the next time we might use more language as the child really has to listen longer to get that keyword. "Do I see what I see? I see a duck." And

then the child is going to pull the picture or the object or whatever the task is that you've given them, remembering that the goal in this case is to identify a word. It doesn't have to be pictures on a table task to get to that goal.

If our goal is different than that, if it's to identify something from a description, I've given two examples with changes in the stimulus. It lives on a farm. It has feathers and says quack quack. Emphasize three key words that are very simple. Quack quack being a very quickly recognized descriptor for a farm animal, easier, whereas for a child ready for more challenge, I'm thinking of an animal that lives on a farm, has lots of beautiful feathers, and has webbed feet. That's a lot of language. Still three areas of description, but more language in each area, and if that's too challenging, the child can't get t you may scale back to the animal lives on a farm, has feathers, and webbed feet." Or go back to quack quack. You can start with the difficult and go to the easy if the child needs it.

Either way

And the third strategy would be coaching the parent. If you're in the situation where the parent is right there with you, either providing auditory verbal therapy or if you are working in early intervention when you work together with the parent, it will be critical to share those strategies that you've just manipulated. The strategies that you've used for manipulating the variables so that they have skill with that as well. So describe the strategies that you're using child you model that activity and then give the parent the opportunity to do the activity without your help. So turn it over completely and let them practice that so that they can get a feel for using those strategies themselves, because that's going to be key in them having

success with the child at home and the child not getting too frustrated or sliding by too much because it's too easy at home. So really working on those strategies with the parents and helping them to master those strategies as well.

And then as the final step, review that activity, discuss the changes that were made and how they worked to help the child either way. So after it's all over, talk with them. Well, which of those things was it? I don't know. Did you think it was better when we used, you know, we emphasized the words a little bit better? Do you think he even needed that anymore? Talk about those things so they're ready to try those at home.

So now to put it into practice just a little bit, I'm going to give you a few examples of children that I have worked with, one very young and one a little bits older. I'm sure there's a variety of children that you're working with as well. So by way of example, I've chosen two children. The first would be Alana. She was identified at birth with a profound sensory neural hearing loss. Got a Nucleus Freedom. Activated at 14 months. Of course, she received no benefit from her hearing aides. They went ahead with their cochlear implant. She was enrolled in early intervention program at 8 months and auditory verbal therapy with me at 15 months of age.

What I've done with you is shown you some goals that I've selected for her at different stages in her therapy plan. The first set of goals for things that we worked on from 1 to 6 months of hearing age. And it says goals and activities. I didn't actually give you any specific activity examples here for this stage, because really, all of these goals can be addressed,

remembering that these are skills that we want to observe. We're working any toy that we pull out, we can look for these skills to be developing and we can be manipulating our using acoustic highland and manipulating our voice and our input to try to observe some of these different skills

The first, of course, would be detecting speech sounds. Simultaneously we're looking for her to detect environmental sounds. Of course, with speech sounds, we want to start in keeping in mind that she was 15 months when she got her cochlear implant. We're looking at moving close to two months of age by the time the six month period is over. So we're starting to introduce conditions listening as well, conditioned play. So I modeled that for her, even at a young age, so that we would present a sound. We would look for her to alert to the sound or look to the sound and model that we would drop a block or something like that. So that would be an activity that you might model and do while looking for detection of speech sounds and environmental sounds.

We look for her to be able to discriminate and imitate vowel and diphthong variety, remembering, again, that discrimination and identification at this point, we're not asking for any picture pointing or anything like that, but we're looking, does she smile when she hears a sound that's different from the one that you had been presenting before? There's one that sounds funny to her, you're going to get a giggle. That will tell you that she's discriminating.

Also, vocalizations will show you that she's discriminating and identifying vocal sounds. This little girl, very early on her first production was

ah-ah-ah, and she did that when she heard any knocking on the door. She said ah-ah-ah-ah. So she was discriminating the rhythm of an environmental sound or of speech, and she imitated that through her speech.

So that's how we saw that develop for her. To identify and imitate 10 to 20 learning to listen sounds. Again, we haven't talked about these, but perhaps you are familiar with learning to listen sounds, being the paired toy with a speech production, moo for a cow, ah for an airplane, had hop hop for a frog. All of these productions that vary in super segmental and segmental qualities. So we'll know that she's identifying, we knew that she was identifying the ah sound when she started doing ah with an airplane. She could discriminate that sound from others. She could identify that sound, and we knew it, because we imitated the airplane, but we knew she identified the sound as well.

So skills that we're looking for her to develop versus activities. Identifying stereotypic phrases that we might use in the session. Bye-bye, sit down, uh-oh, all done, these sorts of phrases, time to go. Things that we used in a very natural way, looking for her to begin to recognize those phrases and, in the context at first, and then out of context later. Recognizing and imitating power words. Those power words would be a list of just the real important ones for little kids that will get them the furthest. More, please, bye-bye. Some of those words, and recognizing those words that we've used in auditory activities.

And again, I haven't listed anything specific, because for a 15 to 20 month

old child, any age appropriate toy, playing is going to get you where you need to go and in terms of as you play and the toy is put away, you say bye-bye to the toy. Any toy is going to be able to be applied for these activities or for these goals.

From six to twelve months of hearing age, we worked on imitating Ling sounds and distance play. We did this at a distance as well. Identifying and imitating age appropriate consonants and a variety of vowels and diphthongs. Again, this was integrated into any activity or toy that we played with. If it was a ball, we might bounce bounce bounce, we might roll, looking for the O in roam. The ba-ba-ba in bounce, bounce. We might cut the playdough. We might roll it, push the playdough, looking for illustrations of different consonants and vowels through that very natural play.

Identifying and comprehending the learning to listen sounds. Moving on to the real words. Of course, we're going to, any time we introduce a cow, we'll say moo, and it would also talk about cow from the very beginning. The word cow, and now we're going to look for her to be able to attach that real word to the toy as well as the onomatopoeia moo of the cow.

Identifying key words embedded in phrases. One activity that Alana loved, we read "Brown Bear, Brown Bear," I would read a page and keep it hidden from her, and she would have to look around the room. We had some binoculars, which she was a little too small to love those, but we had some big sunglasses that she would wear, and she would put the sunglasses on and look around the room and the pictures were hidden on

the ceiling in different places on the wall. And so when I read "Brown Bear, Brown Bear", what do you see? I see a red bird, red bird looking at me. And she would look around the room to find the red bird. So perhaps bird was the keyword for her or dog or bear, whichever of the animals that you're on. And she was looking for the animal, and she loved that game.

To sequence two key elements auditorially. Another game that was very popular was clown parade. I have some stuffed clowns and a stuffed car and so one by one, it is clowns would climb out of the car and everybody would get a clown, and then we would have a parade. And the first clown would tell everyone what to do, two actions: Walk walk walk roll. And then everyone had to perform those actions. So auditory only, she had the direction given by the little clown and then she would show that she picked up those two key elements by repeating and sequencing those two things in the same order that they were given. So that was a fun activity for working on that goal.

From 13 to 18 months of age, hearing age, Alana at this point has moved into preschool, so here are some goals that would be addressed at this point after moving through the others. Imitating the Ling 6 sounds now 12 feet and closer. That goal, of course, will stay with her throughout, because that helps us to monitor her device function. Recalling two elements or following two element directions. So perhaps at snack time she's going to pour the money and now stir it. Those are two actions. At center time, she could put the puzzle on the floor. Those two key words in a direction that she would attend to. Answer common questions. That could be in a structured or a natural setting. Following a story and

identifying a related picture. Of course, it's story time. Very easy to look at how she's developing that goal. And completing known messages. So at story time, "I'll huh and I'll puff and I'll ..." And you fill in a blank from a story she's read previously.

Those are just some examples for a younger child. And then let me quickly introduce you to Kirsten. She was identified at birth as a profound bilateral hearing loss. She's developing her auditory skills and language skills a little bit slower than average auditory language development, given early implantation. She's actually got about four-and-a-half to five years of language development, but we would expect her to be at her age level, having been implanted at about a year. So she's a little bit slower than we would have liked, but she's still doing very well and she participates in a mainstream first grade classroom.

Some of the goals and activities that we might work on for her, I've looked at things that we might work on in individual therapy and then how those things would apply in the classroom setting. So recalling four to five critical elements in a message is something that we're working on. Following multiple element directions. Following a conversation that has not been disclosed to her, the topic has not been disclosed. Repeating sentences with high predictability.

From the activities, and I think that these activities could really work to hit most of the goals that we've just talked about. Mother May I? Of course, we can use multiple element directions for that or we could use sequencing and repeating the sequence for Mother May I? You know, two

big steps, one roll, and one windmill. So that would be a sequence you might use for Mother May I? Scavenger hunt, grocery shopping, tea party, fashion show, craft activities, jump rope rhymes would be repeating with high predictability, as well as you can do jump rope games that involve following directions.

Cooking show is a game that her mom loves to play at home with her and her sisters where mom is the TV chef and audience members are called up to help out with the cooking of dinner for the day and so directions are given to complete the recipe that they're making for dinner. Tea party, by of these fun, you know, girl fun 6-year-old things can really work for all of these high level auditory goals, keeping in mind, too, that the higher level auditory goals, I still work on recalling four to five critical elements if a message and I'm 38 years old.

So the language changes as we get older and as our language gets more developed, but most kids would continue to work on some of these directions as they go along. So language gets more difficult as we make a direction, instead of, you know, put the ball in the cup, now it's do something before you do something else. Or because you did something, do something else. So the language becomes more difficult and still involves four to five critical elements.

In the classroom, the same goals: Repeating sentences with high predictability is something addressed through memorizing poems in our classroom and bible verses. She's in a church based program. Recalling four to five critical elements, packing her school bag to go home. That's a

great time to remember several items that need to go with her. Following multiple element directions. Lots of worksheets in her classroom. It's a very structured classroom. Lots of worksheets that she has to complete based on instructions.

Phone conversation with topic disclosure. Right there in the reading group, as I discussed the story, it's very important for her to be able to follow the conversation around from child to child as the teacher leads the discussion. So that's a goal that can be directly addressed there, and then, of course, any pullout therapy might help to address that in a structured way to then assist the teacher in working on that in the less structured way or structured different environment in the classroom.

So hopefully those examples have given you some food for thought for auditory skill development for children. Just to summarize that we've discussed today, to assess and develop auditory skills, we want to consider those three different parameters: Auditory function, meaningful input, and situational context. They're going to be multiple subskills for each area of input that must be targeted for practice. So lots of individual things to think about in each of those areas.

And while auditory functions develop hierarchically, manipulating input over the various context will ensure that those skills are generalized across different contexts. So that said, all that's left is to share with you some resources. Most of these have been discussed in other sessions that we've done. The "Auditory Learning Guide" I added at the top, and unfortunately, it's not published anywhere. Beth Walker is a certified

auditory verbal therapist and she put it together. I like it the best, because it is a very, I think, an integrated model.

Another auditory model for you to look at and really is more -- it's more horizontal. You look at it and realize that all of the skills that be worked on at one time, versus the vertical one skill before the next structure that several of the others. The SPICE is very good, but it is very linear in that way. The CASLLS and the SPT-HI are all good to look at and see what works for you. The "Auditory Learning Guide" is not published, but if you ever hear of it and find a way to get your hands on it, I would remember that name.

Cochlear America has a few resources for auditory skill development. The here we go CD, if you're working with other children, does have good auditory skill development ideas. And there are some other on-line sessions that we give some more specific therapy ideas. One geared towards preschoolers and one for elementary age students. Yet another for teens. So just to point those out to you.

I'd also like to very strongly highlight our next on-line session. Nancy Caleffe-Schenck will be joining us on November 7 to present "More Sound Speech for Speech Sounds." Any of you who participated in the first in that series called "Sound Speech for Speech Sounds" knows it was very well received and lots of speech slam erred for another addition to that talk. And she's bringing that to us on November 7. And she also will be rolling out a new product that she's developed related to this topic. So do join us on November 7 for a first look at the nice product that she's got for

us. So that will be our first chance to see that on November 7. And Nancy is a great presenter. It's been, again, very popular session that we've offered.

On Tuesday, November 27, I will be back to bring more therapy ideas for preschoolers. That was another popular session, and so we're giving you what you asked for and bringing more therapy ideas for you for little kids. We've got elementary coming up next year in the winter, I think. So keep your eyes open for those things.

I also encourage you, one great way to keep updated with what's going on and which sessions are coming and are available is to register for our hope e-news letter. You can go cochlear.com/hope, and on that page there is a link to bringing you towards registering for the newsletter.

Any comments or questions regarding Hope Programming, you can contact Donna Sorkin. Her e-mail address is given to you there.

And last but not least, we'll have a feedback form. It's in your file share pod to the left. Feedback, a closer look. Let's see if I can go to it there. I'm not sure if you see that or not. Feedback, a closer look, is your form for today. If you will download that to your desktop and save it, then you can complete the form and e-mail that back for us at hopefeedback@cochlear.com. The address is given to you on the form as well.

If you'll give your comments on today's presentation, we'll, in turn, send up

a a certificate of presentation that you can use for your continuing education needs, if you're not an ASHA or AAA member or for whatever purpose you may use those certificates for. And if you are ASHA or AAA, you'll be sent information on taking your test following the completion of the session today.

That brings us to a close. I have gone over my time just a little bit, but if anyone does have any questions, I'd be happy to stay just a minute and field those. Do just type those quickly into your chat box and let me know if you have any questions on the information that we talked about today. And otherwise, I thank you very much for your time. I'm glad that you could join me today for suggestion of auditory skill development.

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