

Hearing age

Hearing Age is the term used to put progress into perspective. If you are concerned that your one and a half year old hasn't spoken his first word and he's just received his hearing aids, expecting words right away may not be appropriate. If it's his experience with sound, he still has to go through the listening experience that the older children have had since birth. If a year later at the age of two and a half, your child's language is much like a child at age one and a half, then he is still making good progress in terms of his hearing age. He is at a one and a half year language level with a *hearing age* of one year.

Of course while one eye is on the hearing age at the other is focused with some worry on the true age of your child. If your child is one year old when he gets his hearing aids, then his hearing age is one year behind his true age. Let's call it one mile instead of one year. Your child's hearing age is one mile behind his true age. He now has to run a bit faster to be able to catch up with where he should be by the time he goes to school. One eye always has to be on how that race is going. Language age is the term used to describe at what level of understanding and language use your child is at. If his language performance is typical of a two year old child, then his language would be two. Look at the graph on the next page. Where will this child be one year from now at this pace? Is he on a catch up course with children his age? Will his language be strong enough to enter school without extra help? Are his listening skills strong enough to take in the information presented in the class room? Language can actually work in spurts of growth, but this graph might help you to see the large picture and the direction you need to go.

This child received his cochlear implant at the age of two. At the age four he has a hearing age of two. His language level is measured at an approximate three year language level. While he still a year behind in relation to the children his age, he has made good progress in relation to his hearing age. He has made three years progress in just two years of hearing. At this rate, this child is likely to catch up with his hearing peers (note the angle of the line for language age). You can see with this graph that the child's task to "catch up" becomes more difficult as he receives his hearing aids or cochlear implant later.

There are times when parents are reluctant to approach a cochlear implant program because they see their child making progress with their hearing aids. The question to be asked is whether the gains made are appropriate for the time spent with hearing aids, given to your child's situation. If your child is slowly learning words taught in a structured way through repetition, his progress may actually fool you. His language age may be plateauing. While he is able to learn new words each week, he is not progressing to learning words in running speech, with less repetition in various situations. He has reached a plateau with a language system that is close to a two year level. With this system he can continue to learn, but not at the rate to catch his peers.

The idea of hearing age becomes a little hard to apply when a child has a mixed hearing history. It's designed to account for the time children were without sensory input through their hearing. The more accurate way to decide on your child's hearing age is to subtract the time he was without hearing experience from his true age. It's a bit fuzzy when you try to apply it to children with fluctuating or progressive hearing

losses. The more hearing experience children have had, prior to getting amplification or a cochlear implant, the further along they will be. Some children who receive a cochlear implant have not heard before. Some have, through powerful hearing aids. If they are candidates for an implant, then the hearing provided was incomplete. Even some knowledge of sound and its use will help a child to start to make use of his cochlear implant. As rough a measure as it is, hearing age and language age with an eye on true age is a concept that you can use to keep perspective with regards to progress.

How is it possible for your child to make more than one year's language growth in one year? Remember that he is more ready than an infant for the language he has to learn. Remember too that the most children who are given appropriate amplification and proper training can make these kinds of gains.

Selling Listening

First of all, listening is different than hearing. I can hear her talking. She's telling me the way to the dentist office. I've told her already that I've been there before but she's telling me anyway. I'm nodding and thinking of buying new socks. When she's done I thank her and head for the dentist. When I get there I find that the office has moved. The directions she told me were probably for the new office but I wasn't listening. My hearing is normal but I was listening.

Hearing is something you actively do with what you can hear. Even though we have all grown up learning to listen, and now do it quite automatically, we may listen with different degrees of effort during the day. Listening can be hard to do, and like anything you do, it has to be learned.

How can we expect children to listen if they don't know the value of doing it? If your child has a hearing loss he has missed a great deal of time learning about sound and how meaningful it can be. Babies begin to hear months before they are born. It's said they can hear quite well. Babies are then born into a world of sensation. At seventeen hours after birth studies have shown that babies will prefer human voices over other sounds.

Of course to us sound is important. This may not be so obvious to your child. Up to the time of his hearing aids or cochlear implant your child has learned ways to understand what you are trying to say. These strategies he has learned may have nothing to do with sound. You are now asking him to use his ears when in the past his eyes have done the job. His eyes have worked better than his ears in the past so why change tactics now?

You have to help your child to discover the value of listening to the new sound he has provided. This won't be done by simply pouring the sound into his ears. Talking about everything incessantly only undersells the value of listening. As adults we would tune this person out as well. We have to make what we say count.

When you are helping your child to listen, ask yourself "What value does this listening have for my child?"

The true value of listening is that conveys meaning between two people. It is a connection.

To learn to listen and to actively process what is said, a child must discover that there is meaning to be found. If the listening holds information that he already knows, how is he going to earn the power of sound and speech? What is your response to a new gadget that offers nothing over your present way of operating? You inevitably stick with the old system.

What is the communicative value of the sound you are asking your child to listen to? Many parents “work” on getting their children to turn to their name being called. What is the communicative value for the child to listen for this? If he turns only to see his parents clap and praise, this will show him the true value of listening. It may turn stale for him quickly. If he turns to his name being called for a treat, for dinner or to be read a book, the communicative value is higher.

If you point to your child’s coat its clear to him what you want him to do. You may tell him to put it on, but what was the adherent value for your child in terms of listening? If he didn’t listen, the success would be the same. Listening is redundant to what you have “told” him through pointing and gesturing. When you tell your child to put on his coat without pointing, he has to listen and work at what is being said. If he is successful he has learned that listening is the mode of operation. He learns that by listening, it is the best way to figure out what you are trying to convey. Listening is not redundant in this situation. It holds communicative value.

When you play with your child and make car sounds, what does the sound add to the situation in terms of communicative value? This is not to say that making these sounds is not important. It’s just that the communicative value to processing the sound is low. If you held the object in a bag out of sight and make the car sound: then your child’s curiosity helps him to work on using the sound. He needs to use the sound in order to figure out what meaning you are trying to convey. What’s in the bag? This, for him, has even greater value than in the earlier example of understanding what you are asking him to do (put on his coat)

When sound has more communicative value, you are more successful at “selling” listening to your child as a valuable tool.

You will have to set up situations that show your child that the way to get meaning is through working on processing the words or sounds being spoken. This will mean not gesturing when you want him to listen. This will mean not pointing to objects you have asked for. This will mean not tapping his shoulder to get his attention. Remember that you too have learned some strategies that work with your child. Being aware that you give things away through gesture is the first step at controlling how much you do it.

When one system works, you are less likely to revise that the system for something different. If your child has already succeeded at getting the information (through watching what the other children are doing at preschool, through lip reading, through watching an adult’s eye gaze or gesture....) why would it occur to him to focus on the words you are saying? Why would he continue to work at getting information that is

redundant? If he sees his parents holding an airplane, what is the payoff for figuring out that they are saying “ahhhhhhh” and not “ooooooo”?

When a child listens first, he has integrated listening into his personality. Your child will do better at school if he listens. There is wealth of information to harvest through hearing. He should learn to use his hearing for all its worth. Your child should learn to listen first and to look and question if he has trouble. This will help him to succeed in school. If he “looks” first (lip reads, guesses, and watches gestures) and listens only when having trouble as a secondary back up, school may become increasingly more difficult. Two children with the same hearing impairment may discover different ways of taking in information.

Because your child has been given hearing late (through hearing aids or a cochlear implant) he has already learned some skills as a visual learner. There is probably a predisposition within each of us to becoming either a visual or an auditory learner. It may still be on the track to becoming visual learners due to their beginning to without aided hearing.

If your child listens and understands without it having been given away through gesture or other clues, then you know that he has understood through his hearing. He learns this too. As he is successful through hearing, he begins to trust that hearing.

An auditory-verbal therapist may cover their mouth at the beginning of treatment for the above reasons. They will use a screen or their hand when they feel your child is looking for clues other than those in the sound being presented. The use of a screen is faded as your child becomes a listener. When your child tries to peek under a hand, you can tell they don't trust their hearing to give them the information.

The same principle of communicative value holds true in helping your child to discover the power of his speech. What is the communicative value of his words? Let's say your child wants a cookie. You hold the cookie out of reach and ask him to say cookie. He knows you know he wants a cookie. What is the communicative value of imitating the word cookie just to get it? He may repeat the word to get the cookie but is robbed of the lesson that speech can help him to convey the meaning. He says the word but is not shown why this is a powerful way of communicating. HE is only doing it because you told him to. He has been taught that speech is work. At some point speech is resented and the cookie is not worth it.

If your child wants apple juice and points at the fridge, you may hold the milk and the apple juice in one hand out of reach. You might say “Do you want milk or apple juice?” If your child says “aa aa aa” you can respond by giving the apple juice. He has learned the power of speech. He begins to trust his speech as a tool. If he reaches up and touches the jug he wants, then he has robbed the situation of any communicative value through speech. You can ask him to say it, but he knows that he has already succeeded through pointing. The communicative value of speech is again zero and getting him to imitate shows speech to be working. You can tell your child doesn't trust his speech when he feels he has to point to be understood.

The activities in this manual attempt to set up situations where something meaningful is conveyed. In many types of listening activities objects are lined up and you ask

your child to hand one to you. What is the child's lesson in working to give you the right object? If he picks the wrong one, he may not see why it is the wrong one. It's wrong only because you said so. Listening in these activities is more likely to be perceived as work. What if you were asking him to choose the object that match a picture you were trying to communicate to him? Now you are working together to solve a problem. When there is something concrete to communicate, your child will more easily see the reason for and the power of listening. If he has to listen again, it is not because you said so it is because the activity tells him that you both have failed at conveying information. If he succeeds, he does match the card you are telling about. If he fails, he will try again because it makes sense to do so. There is communicative value to listening.

Where to Begin

Again when babies are born they meet with a rush of sound. They have heard many sounds before birth, but coming in from the outside world, these sounds have had no meaning. Voices may be familiar, but babies do not yet know what the sound and voices they have heard really mean. How do they learn that one sound is the phone and another is the dog?

As time passes they are able to learn as they experience the world. They learn that the people and things around them have a look, a feel, a smell, and a sound. It is than that they start to know what a sound mean. It means everything that comes with it. A mother's voice brings her smell, her face and her touch.

When your child first receives his hearing aids, sound may be a new experience. Certainly softer sounds are a new experience. A baby has had its first year to be held and talked to. A baby begins to understand and as he develops, he will say his first word. This typically happens after a good eleven or twelve months of sorting out one sound from another.

While hearing aids or a cochlear implant will provide a great deal of information to your child, he will not make use of that information without a lot of discovery, failure, success, and repeated experience.

When sound is new, voices may sound the same. Your child may know when sound is there and when it is not. They may then learn a long sound from a short one. Individual words, no matter how different they may sound to us, fly by your child as identical bursts of sound. As adults we are so adept at processing the differences between the sounds in our language we can listen to words spoken in running speech and hear them as individual words.

“In reality words are most often spoken with pauses. Read this sentence and hold your voice box. Think about how quickly we speak and how our words ruin a continuous stream.”

Duration, Density and Pitch

When a child begins to sort out differences between speech sounds, he does best when those sounds are lengthened or repeated in time. In this way the information is sustained for a longer period so that your child can have more time to think about it. We have auditory memory. A person says a phone number and we have the image in

our mind of what numbers were said. We can then repeat that number to keep it there. These are skills that your child has not yet developed.

While words may sound too much alike at the beginning, your child begins by sorting out differences in the rhythm of voices. Sounds that are short versus sounds that are long. Sounds that are loud versus sounds that are soft. Sounds that are high in pitch versus sounds that are low. These are all skills that as your child improves, will help him to process these same features, meaningful in language, at quicker speeds. If you begin by expecting your child to learn words right away, he may miss basics that will slow down the process. To learn a word, you must associate the sound of that word with the object or concept it goes with. If your child doesn't have the skills to hear the difference between the words you are teaching, then he may become frustrated or confused. We want to avoid this. Success builds on success.

If we start with sounds that your child can easily hear the difference between, then he is more likely to learn that one sound is associated with something different. It is this realization that starts your child on the path to "breaking the code". We have done all this children. If we were raised in an English speaking family, then you have figured out that "r" is different than "w" and will not be confused if someone said "white". In some languages "r" and "w" are interchangeable. In those languages, using one or other will not change a word's meaning. They may hear differences between sounds that we hear as one. We are all equipped to break the code of the language we are immersed in.

Beginning Sounds

- **Learning to Listen Sounds**

There are sounds that go with toys that auditory-verbal therapists call **LEARNING TO LISTEN SOUNDS**. These sounds are easy to learn, because they are easy to hear as different from another. They are distinct in terms that your child is ready for at the beginning. They are more different than words can be.

Most of these sounds are different in their pattern. They are different in terms of duration, intensity and pitch. Some Learning to Listen Sounds are close to one another in how they sound and are usually introduced late as a way of introducing a sound difference in words. For example, your child in later stages may become confused by words like "pig" and "big", "pear" and "bear", "pole" and "bowl". He has done well to hear enough of the information provided in the word to know it is one or the other, but the brief voicing in "b" that makes it different than "p" that flies by as the rest of the word is spoken is not yet significant to your child. Before working on listening for this difference in words, your therapists may introduce the Learning to Listen Sounds "puh puh puh puh" for the boat versus "buh buh buh buh" for the bus. Although your child is definitely learning words, he can still benefit from the added repetition offered by Learning to Listen Sounds.

When your child is first starting to learn about sound and their meanings it is best to start with Learning to Listen sounds that are very different in terms of duration, intensity and pitch. It is also good to include sounds that extends or

his shoulder. Call his name. You may have to call him twice more. Only then tap his shoulder and say “I was calling you” and then repeat his name “BRIAN”. Only call him for a reason. If you want to practice this then make up reasons to call him. Have more treats, or call him to see a toy. Call him to see that Daddy is home. Make it something that will make your child think “Wow, I’m going to listen next time so that I can this sooner”. If you call him only to test him, it will not reinforce listening behaviour. It will actually undersell its value.

- “I Hear That”

Often just after a child receives his hearing aids or cochlear implant, parents are sent home with their first task. They are told to help their child to be aware of the sounds around him. Becoming aware that sounds are used around us for meaning is important. You introduce your child to a new source of learning. It is good to associate bringing his attention to sound with a cue. Many parents in the auditory – verbal approach use the phrase “I heard that” and point to their ear to indicate a sound was noticed.. This will, over time, prompt your child to focus on the sounds that are occurring around him. It cues him to listen and to try to decide the meaning of the sound he hears. If you hear a sound, get your child’s attention and point to your ear. Say “listen!” Give him time to listen and think about the sound. You may want to imitate the sound with your voice. Only then take him and show him what has made the sound. Tell friends and family that you may not answer the phone until it rings for a while. Set your answering machine accordingly. Hopefully your child’s attention to the sound around him will grow and he will not need to be cued. Soon he may point to his ear to alert you.

Building Listening Skills

We’ve talked about where to start. How do you keep your child moving? Children tend to trade one level of one language for the next one as they realize it is more effective. The carrot on the string that keeps them moving is the ever increasing power of advanced language skills for communication.

As children learn one level of language they are better prepared to learn the next. Every word, concept or phrase that your child learns better prepares him for learning more. Language scaffolds. Each new level is built upon existing skills.