

Louisiana Early Hearing Detection and Intervention

**A Resource Guide for Parents of
Children Who Are Deaf or Hard of Hearing**



**HANDS&
VOICES**

Contributors

Statewide Parent Consultants

State of Louisiana, Department of Health and Hospitals, Office of Public Health
Hearing, Speech, and Vision Program

Louisiana Hands & Voices

Nicole Deleon, Director

Jill Guidry, Treasurer/Secretary

Marbely Barahona

Amy D'Alfonso

Penny Hakim

Mariah Ranko

Tammy Radcliff

Melinda Peat – Advisory Board

Terri Mohren – Advisory Board

Rana Ottallah – Advisory Board

Louisiana Early Hearing Detection and Intervention Program

Melinda Peat, Audiologist

Marbely Barahona, Parent Consultant-Bilingual

Tri Tran, Epidemiologist

Wendy Jumonville, Outreach Coordinator

Terri Mohren, Systems Development Coordinator

Mary Jo Smith, Tracking Coordinator

Jeanette Webb, Follow-up Coordinator

Anna Wells, Data Clerk

Louisiana Hearing, Speech, and Vision Program

Melinda Peat, Program Manager

Neomi Berfect, Administrative Coordinator

Megan Guilbeau, Audiologist

Lorraine E. Farr

Louisiana Children's Special Health Services

Dr. Susan Berry, Medical Director

Angela Durand Myers, Parent Consultant

Louisiana Early Intervention Program, EarlySteps

Brenda Sharp, Program Manager

Tedra Landreaux, Parent Consultant

Acknowledgements

This Resource Guide exists because families with young children who are deaf and hard of hearing, along with professionals who work with these families, asked for it. It is our hope that families find valuable unbiased information in this guide.

We would like to thank the dedicated parents and professionals who contributed their time, energy, wisdom and experiences.

Special Thanks to:

Kara V. Murphy. Thanks to Kara's hard work and dedication this guide will be available to all families in Louisiana who have young children who are deaf and hard of hearing.

Early Support, United Kingdom

State Early Hearing Detection and Intervention Programs
Arkansas, Colorado, Florida, Kansas

American Academy of Audiology

Joint Committee on Infant Hearing Screening

Centers for Disease Control/Early Detection and Intervention Program

National Center for Hearing Assessment and Management
(NCHAM)

Maternal and Child Health Bureau of the Health Resources and Services Administration,
U.S. Department of Health and Human Services

Boys Town National Research Hospital

Table of Contents

Introduction	4
Personal Stories of Success	5
How Are You Feeling?	10
Extended Family and Friends.....	11
Brothers & Sisters.....	11
Who Will Help Us?	12
Audiology	16
How Does the Ear Work?	16
Hearing Tests for Infants & Toddlers	17
What Is an Audiogram?	20
The Speech Banana.....	21
Types of Hearing Loss.....	22
Degrees of Hearing Loss.....	25
Hearing Aids.....	26
Cochlear Implants.....	28
Communication and Language	33
Making Communication Choices	41
Deaf Culture.....	45
Tips on Reading to your Deaf Child.....	48
Toddler/Infant Services in Louisiana	49
Helpful Tools for Decision Making	50
Questions for Providers.....	51
Questions for Audiologist	52
Questions about Hearing Aids/Cochlear Implants	53
Beyond Early Intervention	54
Deaf Child's Bill of Rights	57
Resources	59
Glossary	62

Introduction

This guide is designed to give you information on the important things that you may want to know as the parent of a child who is deaf or hard of hearing. The goals of this guide are to help you:

- Gain insight from other families' personal stories
- Discover you're not alone in your journey
- Understand what your child's hearing loss might mean for your child and your family
- Become aware of the different amplification options
- Explore communication options that are presented in an unbiased way
- Learn the importance of Early Intervention
- Help and support your child
- Understand Deaf culture
- Utilize local, statewide and national resources available
- Have a better understanding of medical terminology
- Learn about the rights of individuals who are deaf or hard of hearing and how to advocate for them.

While reading through this guide, you may come up with questions and ideas you haven't considered before. The options and decisions your family is facing are your options and decisions to make for your child, with information and support from professionals. There is no one "right" way when it comes to finding the program that works for your family and allows your child to succeed. His or Her needs as well as the needs of the family will change as your child grows. No decision is set in stone, be open to new ideas and don't be afraid to change your communication approach if necessary. Remember, research shows that a communication choice should not be solely based on the degree of hearing loss.

Personal Stories of Success

Asahel is our first born son. As new parents we made sure we read all the necessary literature, asked all the necessary questions, and took all the necessary precautions to make sure we had a healthy pregnancy and a healthy baby. We did. He was born very healthy and beautiful. He passed all of the tests performed at the hospital, even his newborn hearing screening.

We noticed that we had to talk to him really loud to get his attention. This raised a little concern, and we discussed it with our pediatrician. He assured us that he was fine, and told us just to wait until he turned one. We waited, and kept asking and at 14 months of age we discovered that Asahel was profoundly deaf in both ears.

After receiving the diagnosis, we were in denial; we felt sadness, guilt, inadequacy, sorrow and self-pity. In time all of those feelings started to disappear, and we started to receive the necessary assistance. We made a plan, followed each direction, considered each option, asked questions, researched, attended meetings

and educated ourselves to make sure that we were doing everything we could to be good parents for Asahel.

Thirteen years ago we felt sorry for our little boy; we thought he would never be able to talk, to hear, to play and interact with others like any other child. WE WERE WRONG!! Today, Asahel is like any other teenage boy. He interacts with other children, plays sports, is a boy scout, is learning to play the piano, dances and even sings. He is in a regular classroom in the public school system and on the Honor Roll most of the time. Asahel is our inspiration; he made us what we are today. We have learned many important lessons through this journey. The most important one is that miracles do exist; we just need to recognize them because they come in different ways. In our case, they came in the form of doctors, audiologists, teachers, speech therapists, and counselors, who were sent from heaven to perform a miracle in our lives.

*-Asahel and Marbely Barahona,
New Orleans*



Personal Stories of Success

My daughter, Kaye, was diagnosed with a profound hearing loss at 2 years of age. Her loss was progressive; only a mild loss in one ear at birth. I remember clearly the day the audiologist told me she had a profound hearing loss. I felt overwhelmed, afraid and alone. I share with you that her hearing loss has not defined my daughter or limited her life. Through early intervention providers, audiologists, speech therapists and teachers, we received information and guidance.

Throughout her life, Kaye has had as many hearing friends as deaf friends, allowing her to easily exist in both the hearing and Deaf community. Kaye is in college and has many hopes and dreams. Her determination is evident in her favorite quote by Winston Churchill – “Never, never, never give up.” She continues to inspire us.

-Jill Guidry



Kaye with her horse, Goldie

Personal Stories of Success

I definitely would say that my life has not turned out the way I ever dreamed it would. I have two boys named Luke and Noah. Luke is 8 years old and Noah is 6. Luke was diagnosed at the age of 2 ½ with auditory neuropathy. I knew that something was wrong because he was not really talking much. I had his hearing tested several times and he would always pass in the sound booth. He finally got his second set of tubes and the doctor suggested we do an ABR. On that day the doctor told us “Your son is not deaf but he can’t hear”. We thought to ourselves “What does that mean?”. They told us that he had auditory neuropathy and that he qualified for a cochlear implant. We went through all types of emotions. How could this be? No one in our family has a hearing loss? But, I told myself it could always be worse! From there on I did everything that I could to be strong for my family and mostly for my son. My husband and I had so many decisions to make. Where will he go to school, will he be ready for kindergarten, what type of speech therapy should he attend, sign language, cued speech? The list goes on and on.

I forgot to mention... I was also pregnant with Noah at the time. We were told that it would be highly unlikely that he would also be born with auditory neuropathy. Guess what? They were wrong!!! We went through all the same emotions again, but at least this time we had a little more experience. Since we caught it so early, Noah was able to be implanted at 18 months. Luke and Noah have two totally different personalities so the experience has been quite different for both. They are best friends and I am glad that they are able to support each other when sometimes we as their parents don't understand.

Today they are in mainstream classrooms. Luke is entering 3rd grade and Noah is entering 1st grade. They play sports and are in Boy Scouts. They are fearless! They inspire my husband and me every day. They have inspired me to dream bigger dreams than what I expected out of life. For that I am always thankful for the two little blessings that God has given me!

-Nicole DeLeon



Noah and Luke DeLeon

Personal Stories of Success

It seems like only yesterday our oldest, Madison, was born. I can still remember the nurse walking into the room asking if we wanted to have her hearing screened. Something in me said YES, have the test. Thank goodness we did, because Madison did not pass. However, because I had a cesarean we were told not to worry, that this was common, and the pediatrician recommended follow up testing when she 6 months old. I expressed my concerns to the pediatrician. I told him about the *at home tests*: hitting the frying pan with a spoon and clapping loudly behind her. We were told to wait until she's six months old to have testing. Finally she was six months old, and we were referred to see an ENT. Over the next two months she had PE tubes, several hearing tests, a referral to a second audiologist, then finally a diagnosis of a profound hearing loss. For the next few weeks I was on an emotional roller coaster with so many questions running through my head. Where would she go to school? Would she have friends? Drive? Date?

She was immediately fitted with hearing aids and enrolled in early intervention. We were amazed at how well she was progressing. When Madison was 2 years old she had plateaued with her hearing aids. After one year of research and soul searching we made the decision for Madison to receive a cochlear implant. Madison started school in a typical class, makes honor roll, has lots of friends, plays softball and even gave dance class a try! She is doing all the of the things I feared she would never do, and I am finally getting off of that emotional roller coaster I had been on. We were in a good place; everything was on track when we were

blessed with our second child, Kirk. This time around things were a little bit different. Although it did not matter, we knew what our chances of having another child with hearing loss were and knew whatever the results were, it would be ok!

The results were in....he passed! I had such mixed feelings; I was happy and relieved, but sad at the same time. I didn't want Madison to feel alone or left out. When we told Madison, her reaction was heartbreaking! She cried and said she wanted her brother to be like her; she didn't want to be the only one who couldn't hear!

As time passed we started to notice Kirk wasn't responding the way we thought he should be. We decided to talk to his doctor and other professionals in our life. Everyone said that we were overreacting because of what we had been through with Madison.

One day my husband and I walked into Kirk's room calling out his name, getting louder each time. He was lying in his crib facing the wall; we did not get a reaction from him until he was startled by our shadow. Here we go again! Kirk was diagnosed with a profound hearing loss at fifteen months old. Hearing this was just as hard as it was with Madison. I honestly didn't think it would have hit me as hard this time. The emotions were not all the same, but they hurt just as much. The good news is that these emotions passed faster this time.

Because Kirk has a profound hearing loss, the audiologist suggested starting the cochlear implant process right away. The

decision was much easier to make this time! We started scheduling the appointments needed for surgery approval and enrolled him in Bright School. Things were moving along, until we had to evacuate for Hurricane Katrina which hit on the day Kirk was supposed to start school. This definitely put a hold on everything. The implant team we were working with shut down for quite some time. We couldn't wait any longer, and decided to work with another implant center.

Finally, things were back on track. While having the tests needed to be sure that he was a candidate for an implant, the MRI results showed he had enlarged vestibular aqueduct syndrome (EVAS). The doctor explained that the enlarged duct was filled with fluid and that when it had burst, the fluid wiped out his hair cells. Since EVAS is genetic, Madison most likely had this syndrome as well. Kirk

received his first implant when he was three years old and his second one a year later.

Kirk progressed amazingly despite the obstacles we were faced with post Katrina. He too started school in a typical class, makes honor roll, has lots of friends, and plays both baseball & basketball.

Today, Madison and Kirk are well adjusted typical kids that I could not be more proud of. The two of them have a special bond. They are able to share their feelings with each other and know that no matter what life throws their way they can count on each other to be there. I am so thankful for my two wonderful blessings. I would not be the person I am today if it weren't for my children and all of the wonderful things I have learned from them and our experiences along this great journey.

Mariah Ranko



Madison and Kirk Ranko

How are you feeling?

Everyone has a different reaction when they discover that their child has a hearing loss. Some parents will feel devastated by the news, others will be relieved that their suspicions have finally been confirmed. Some parents, who themselves are deaf or hard of hearing, may be accepting and comforted knowing that their child will share the same culture and experience. You will have your own reactions. There is no right or wrong way to feel.

When you are first told that your child has a hearing loss, all of the information given to you can be difficult to remember. Do not be afraid to go back and ask questions when you have time to think.

There is a wide range of support available to help you understand your child's hearing loss and come to terms with what this means. Support can come from family and friends, your local community, services for deaf or hard of hearing children, volunteer organizations and from other parents of deaf or hard of hearing children.

Parents of deaf or hard of hearing children feel a huge range of emotions when they discover that their child has a hearing loss. Keep in mind that everyone is different and you may or may not feel all of these emotions. Parents have talked about feeling:

Shock	Relief	Fear
Denial	Sadness	Anger
Confusion	Comfort	Guilt
Surprise	Disbelief	Grief

You may feel one of these emotions strongly. You may feel a whole range of them. Sometimes you may jump from one to another through the course of the day. Different events throughout your child's life may reawaken these emotions, it is normal to feel any one or even a combination of these emotions.

Our hope is that if you do experience confusing emotions about your child's hearing loss then this section will provide you comfort and give you more understanding. Gathering information and meeting other parents can help to take the mystery and some of the fear out of having a child with a hearing loss. It is important to do these things when you feel ready.

This guide contains information about hearing loss and some of the issues you may face as the parent of a deaf or hard of hearing child. It also gives details of the people, organizations, and groups that can support you and give you more information.

Extended Family & Friends

Your extended family and friends are an important source of support for you and your child. They may babysit for you – to give you a break. They may spend a lot of time with you and your child. Others may be there for you to talk to when you feel you need support.

If other people in your life are not familiar with hearing loss, they may need your help to get used to the fact that your child is deaf or hard of hearing. As you learn new things, you can give them information. This can help them support you.

As your child gets older, family members may need more support to learn the communication method on which that you decide. For example, if grandparents are babysitting they will need to learn how to communicate effectively with your child. By learning to communicate, they may come to understand more about your responsibilities as a parent of a deaf or hard of hearing child. This can help your child feel they are an equal part of the family.

Brothers & Sisters

If your deaf or hard of hearing child has brothers or sisters, it is important that they can successfully communicate. Communication will allow them to understand each other, resolve differences and express emotions – as well as have fun playing together!

Young children constantly learn about language and communication and usually find it easier than adults to pick up new ways to communicate. By involving your other children in the things you do with your deaf or hard of hearing child you can help everyone to feel they are an equal part of the family.

Having a deaf or hard of hearing sibling can be a positive experience for a child. It can allow them to have a positive attitude towards difference. It can also give them a deeper understanding of what makes good communication.



Who will help us?

There are a range of services, professionals, and groups who can offer you and your child support. The list that follows is not complete but gives basic information about the most common services and professionals that you might come across.

If you are unsure of the role of people you are meeting, you can always ask them to explain. If your child has another disability or special need you may have contact with more professionals and other services.

It is important to remember that you know your child better than any professional who works with you. The role of professionals is to support you and your child and encourage your child to develop as fully and quickly as possible.

The services listed on the following pages are not in order of importance. You may find that you work very closely with staff from some services and less with staff from other services. This will depend on the needs of your child.



Audiologist

The audiologist may help you by:

- Having the skills and equipment for infant hearing testing
- Recommending amplification (hearing aids, FM systems) or cochlear implants to meet the needs of your child
- Providing audiology follow-up, monitoring and maintaining your child's amplification system, including well-fitting earmolds
- Testing your child with and without amplification and discussing your child's responses to sounds
- Providing information about early intervention program options and working with you and early intervention specialists

Early Intervention Specialist

The Early Intervention Specialist may be a Speech-Language Pathologist, Teacher of the Deaf/Hard of Hearing, Audiologist, Early Childhood Special Educator, Occupational Therapist, Physical Therapist, etc. Each of these professionals has special expertise to help you and your baby. You may work with one or more of these professionals. Each Early Intervention Specialist may help by:

- Describing the services and support systems available through early intervention programs and the benefits of your family's participation
- Discussing your observations and concerns about your child
- Answering your questions about the effects of your child's hearing loss on communication, participation in family activities, and learning
- Helping to assess both your child's and family's strengths and needs
- Providing a comprehensive family centered early intervention program that will help your child with listening and communication skills
- Working with you and the audiologist to help you and your child make the best use of amplification and ensuring that the amplification is working properly
- Documenting your child's progress in communication and developmental areas
- Working with you to plan for your child's educational needs when, at age 3, your child is ready to transition from the early intervention program
- Providing opportunities for networking with adults and children with hearing loss

Pediatrician/Family practitioner

Your child's primary care physician may help by:

- Working with an audiologist experienced in infant hearing testing
- Providing information about medical and/or surgical treatment for the various types of hearing loss
- Referring promptly for amplification and early intervention upon confirmation of a hearing loss
- Referring you to early intervention programs and specialist counseling (ENT, Geneticist)
- Treating, or referring to an ENT, when your child has a middle ear condition that may further limit hearing



Otolaryngologist or ear, nose, throat (ENT) physician

The ENT may help by:

- Confirming the nature and/or type of the hearing loss
- Discussing possible medical or surgical treatment, including cochlear implants, for different types of hearing loss
- Referring promptly for amplification and early intervention upon confirmation of a hearing loss
- Authorizing the use of hearing aids for your child
- Evaluating your child's need for ventilation tubes if chronic middle ear infections exist
- Following your child throughout life for ear healthcare

Speech Language Pathologist

A speech and language pathologist may help by:

- Offering support and advice to parents of children with any type of communication problem
- Helping children to develop their communication skills, in sign language, cued speech, or in oral language, which may include: receptive language, expressive language, and speech skills.

Parents of children who are deaf or hard of hearing

LA Hands & Voices Guide By Your Side Program

Parents (hearing/deaf) may help by:

- Preparing you for what you may expect with professionals and early intervention programs
- Providing information about people and resources that have been helpful
- Listening to you and answering your questions when possible
- Helping families identify options without telling them which options to choose
- Offering experience from a Parent Guide who knows what it is like to raise a child who has a hearing loss
- Giving the family a chance to meet others who are traveling down the same path

LA Hands & Voices/Guide By Your Side Program:

Guide By Your Side™ (GBYS) is a program from Hands & Voices that provides emotional support and unbiased information

GBYS provides:

- Unbiased resource dissemination about hearing loss
- Emotional support from another parent who “understands”
- Information about early intervention services
- Opportunity for continued support through Louisiana Hands & Voices from trained Parent Guides to families of newly identified children who are deaf or hard of hearing and to the systems that serve them

Adults who are deaf or hard of hearing

- Sharing life experiences

- Serving as role models
- Serving as language models

You and family members can help your child

- Learn enough to make informed decisions - learn as much as you can about hearing loss and communication.
- Keep your appointments – follow-up is essential.
- Recognize your responsibilities – you are your child's primary role model for language, values, learning and knowledge.
- Choose a communication approach – thoroughly explore various options to determine which approach is best for your family.
- Learn and begin using your chosen communication approach as soon as possible – make the commitment to use the chose approach full time. Consistent use is essential for good results.
- Communicate with your child – talk (and cue or sign) to your child about anything and everything just as you do with your children who hear. Enjoy your child! Have fun together!

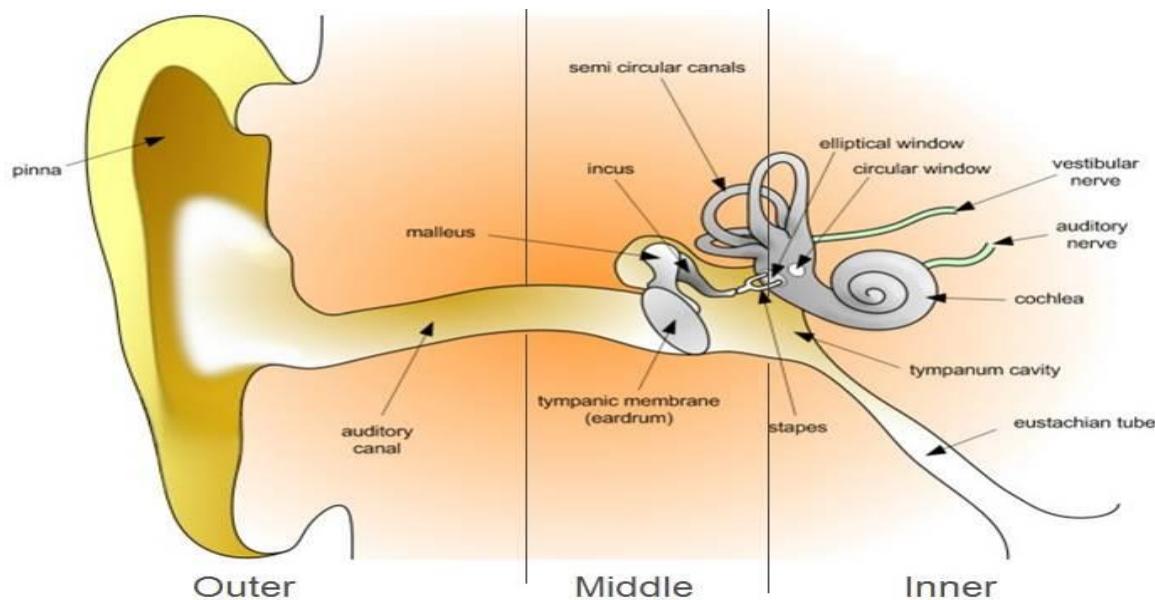


Audiology

Audiology is the study and measurement of hearing and hearing loss. An audiologist can be a part of a hospital, ear nose and throat physician's office, local health clinic, or part of a speech and language center. An audiologist will test your child's hearing, give you information about hearing loss, fit hearing aids if your child needs them and put you in touch with other people who can help.

How does the ear work?

The ear has two main functions. 1.) It receives sound and changes it into signals that the brain can understand. 2.) It helps us with our balance.



Sound's journey through the ear to the brain starts in the outer ear. The outer ear is the part of the ear that we can see and where sound enters. The sound then travels into the ear canal. In the ear canal, sound bounces against the eardrum and causes the eardrum to vibrate. These vibrations travel to the middle part of the ear where there are three tiny bones. These bones vibrate which sends sound into the inner ear.

The inner ear is called the cochlea. The cochlea looks like a snail's shell. It is filled with fluid and contains many thousand tiny sound-sensitive cells. These cells are known as "hair cells" because they look like short hairs. As the vibrations enter the cochlea, they cause movement in the fluid and cause the hair cells to bend back and forth. The movement of the hair cells is like the movement of seaweed on the sea floor when waves pass over it.

The final journey of sound through the ear is the journey from the cochlea to the brain. The bending movement of the hair cells stimulates the auditory (hearing) nerve, which sends messages to the brain. Finally, in the brain, the sound is understood.

Hearing Tests for Infants & Toddlers

None of the following tests used will be painful or uncomfortable for your child. If you are worried about any of the tests or have any question, your child's audiologist will be able to give you more information.

Otoacoustic Emissions (OAE)

The OAE is a very quick test that can be completed on a quiet or sleeping child of any age. A small earphone is placed in the child's ear and a clicking sound is played.

If the cochlea (inner ear) is working and there is no fluid or blockage between the earphone and the inner ear, the earphone will pick up an "echo" response of the cochlea at different frequencies. This is recorded on a computer.

This is not really a test of what the baby hears; it simply tells the doctors whether the hair cells in the ear are functioning within normal limits. This is a screening tool to see if more testing is needed. It is very important to follow-up if any possibility of hearing loss exists. Failure to follow-up could have serious consequences for your child's language development.



Auditory Brainstem Response (ABR)

To understand the ABR, first one must understand that even when children sleep their ear and brain detect sound just like when they are awake.

The ABR test is done while your child is asleep. It gives the audiologist information about the sound your baby hears. Usually babies under six months of age will sleep naturally for the test. If your baby does not sleep naturally for the test, the doctor may give them a mild sedative.

Before the test begins, the audiologist will place a small earphone in the child's ear. Small sensors are put on the child's head and ears and these sensors are attached to the head with a jelly-like substance so they will stay in place for the testing. The sensors are connected to a computer. The results from the ABR test will tell if your baby hears the sound by looking at the changes in your child's brain waves on the computer.

The information from the ABR test can help the audiologist determine the kind and degree of hearing loss your child has and can make sure the right hearing aids are chosen and are fitted properly.

Auditory Steady-State Evoked Response Test (ASSR)

(also known as Steady-State Evoked Potentials [SSEPs])

Your child must be in a deep sleep to perform this test, so children of any age may need to be sedated for this testing.

Like the ABR test, the audiologist places a small earphone in the ear and small sensors on the child's head and ears. The sensors are attached to a computer. Again, a series of sounds are played at different levels of intensity (loudness) and at different frequencies (pitch).

The computer reads the patient's brain waves while the sounds are being played to predict what your child can hear. The ASSR is most often used for children with severe hearing losses to add additional information to the ABR test results and aid in the choice of a hearing aid that is right for your child.

The ASSR test is relatively new and is only available in some places. Your audiologist can tell you if they can perform this test.

Behavioral Tests

Behavioral tests use play and games that are appropriate for your child's age. By using play as part of the testing, your child may not notice they are being tested. This type of testing does require a response from your child. During this testing, the audiologist watches to see how your child "reacts" in response to different sounds. The audiologist will choose the best tests depending on your child's age and maturity. These tests will allow the audiologist to produce an audiogram for your child's hearing.

Tympanometry

This test is used to see how well your child's eardrum moves. Problems with the middle ear, such as fluid or ear infections, can seriously affect the sounds that your child can hear.

A small earpiece is held gently in your child's ear canal. A small amount of air pressure pushes on the eardrum. A normal eardrum should be free to move in and out with the change in air pressure. If the eardrum is not freely moving, then there is likely to be some fluid or another problem in the middle ear. Your child's physician may be able to treat this condition.

Visual Reinforcement Audiometry (VRA)

Usually used for children 6 months to 2 years of age with normal head turning ability. Sounds of different frequencies and intensities are played through speakers or earphones. The audiologist will spend time training your child to turn his head to look at a light-up toy or puppet when he hears a sound. This test can check the full range of hearing. Specific information about each ear can be obtained if earphones are used. Your audiologist will be able to explain the results of the test, which are marked on the audiogram.

Conditioned Play Audiometry

Usually used for children 2 years of age and older. Sounds of different frequencies and intensities are played through speakers or earphones. The audiologist will spend time teaching your child to play a game by putting a block in a bucket or a ring on a stack when they hear a sound. Once the child understands the game, then the audiologist will proceed with the testing. This test can check the full range of hearing but does not give separate information about each ear unless the child is wearing earphones.

Speech Awareness Threshold Test (SAT)

This test determines the lowest level of loudness at which your child is able to detect (hear) speech. He may not be able to understand the difference in words at this level of intensity.

Speech Reception Threshold Test (SRT)

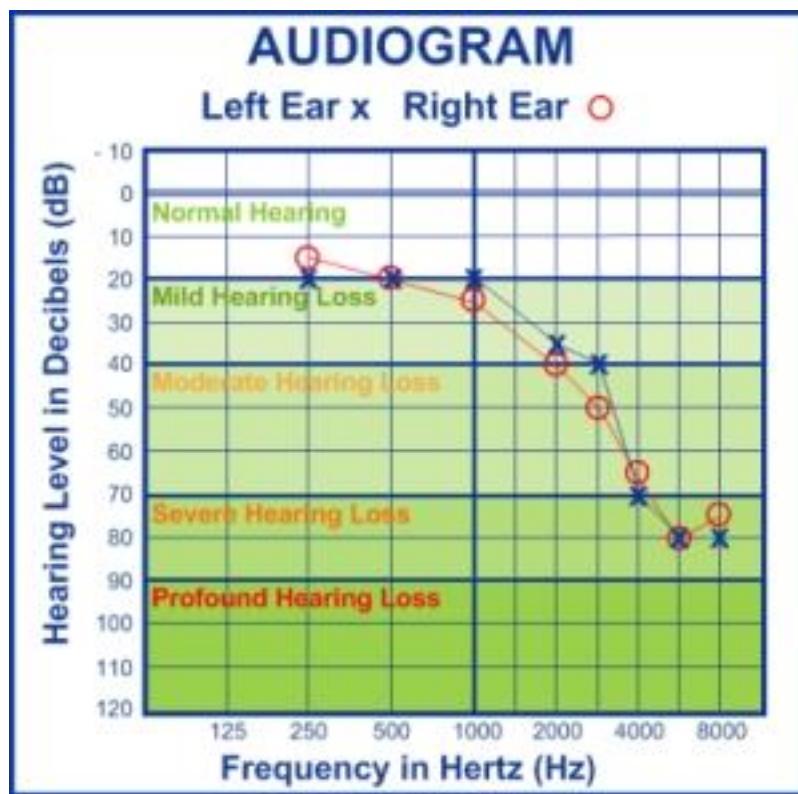
This test determines the lowest level of intensity at which your child is able to hear and understand words without visual information from lip reading or sign language. The audiologist may give your child a selection of toys, pictures, or objects, and ask your child to pick the one that is named or point to body parts. This test may not be suitable for very young children, or for children who have a profound hearing loss.

What is an audiogram?

An audiogram is a chart used to record the results of a hearing test. Across the bottom of the audiogram, low-frequency sounds start on the left of the chart, the middle range is in the middle, and the high-frequency sounds are on the right of the chart, just like the keys on a piano.

Down the side of the chart is the intensity (loudness) level. The further down the on the chart the hearing levels are marked, the greater the hearing loss. Therefore, the higher the number is in intensity, the louder the sound.

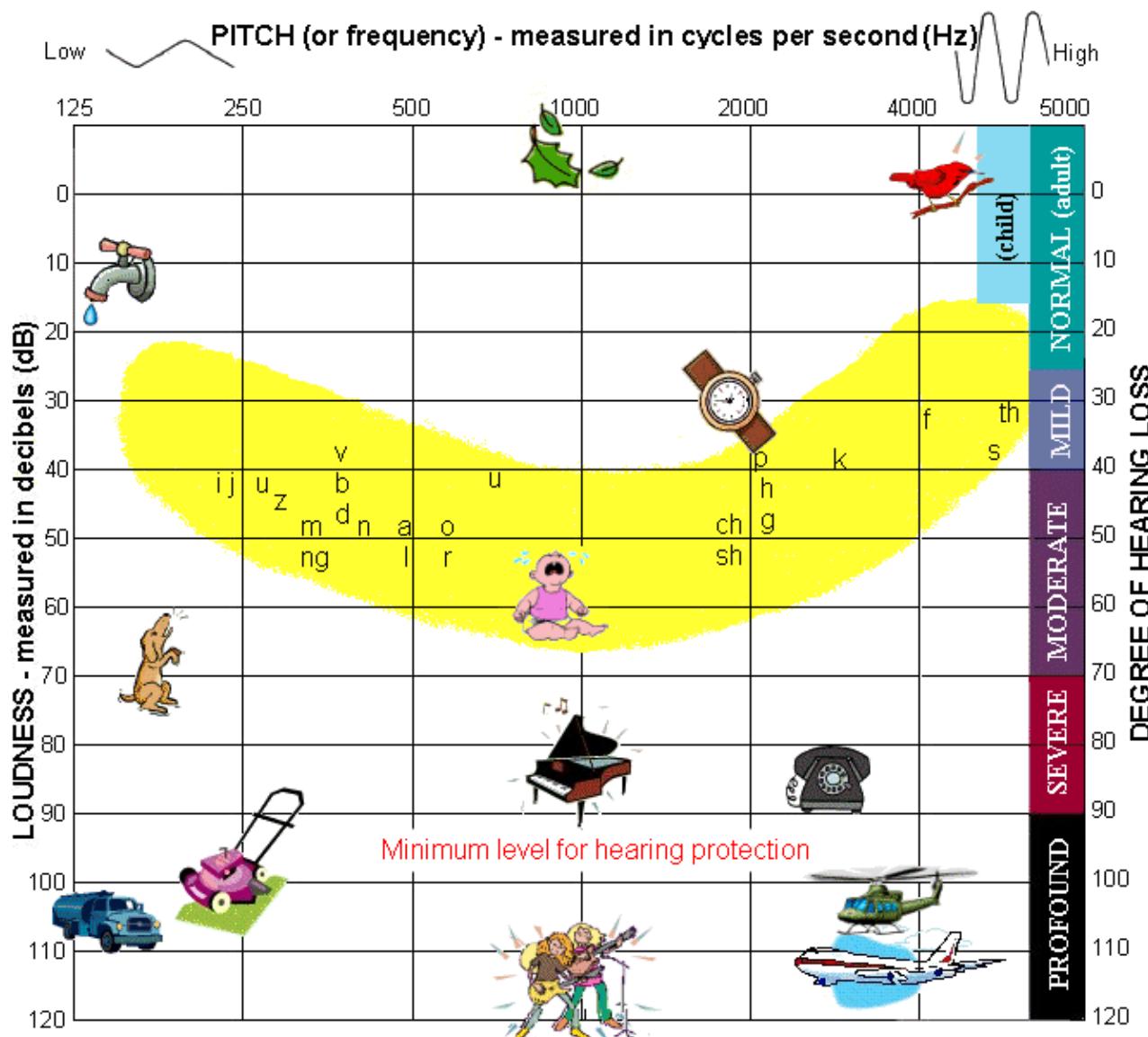
Below is a sample audiogram. The blue X's indicate responses in the left ear, and the red O's indicate responses in the right ear.



With young children, it may be difficult for an audiologist to get enough information for a complete audiogram in one appointment. Frequent attempts may be required to finish the test. With infants, the audiologist may not use the audiogram form. Your audiologist can help you understand your child's audiogram.

The Speech Banana

The “speech banana” is a term used to describe the area where the sounds of human speech appear on an audiogram. When the sounds are plotted out on the audiogram they take the shape of a banana, therefore audiologists and other speech professionals often refer to that area as the speech banana.



15dB is the loudness of water dripping, 70dB is the loudness of a dog barking, and 120dB is the loudness of a gunshot. A higher frequency sound (2000-4000 Hz) is the noise made by a whistle. A lower frequency sound (250-500 Hz) is the noise made by a big drum.

Speech is a mix of low, middle and high frequencies sounds. Consonants like f, s, and t are higher in frequency than the vowels, a, e, i, o and u.

Types of Hearing Loss

Bilateral Hearing Loss: Hearing loss in both ears. Amplification in both ears is usually necessary for the child to perceive sound.

Unilateral Hearing Loss: Hearing loss in one ear.

The prevalence of permanent unilateral (one-sided) hearing loss is estimated to be approximately 2 per 1000 among the school-aged population. Many times, a unilateral hearing loss is not detected until a child reaches school age. Often, however, there is no known cause for the loss and children are born with unilateral loss with no risk factors for hearing loss. Children with unilateral loss generally have problems “localizing,” or locating the source of sounds. This happens because we need two ears that hear approximately the same to locate the source of sound. Additionally, children may have difficulty understanding speech in the presence of background noise, particularly if the “good” ear is close to the competing signal. Some children find it difficult to pay attention and follow directions.

Some strategies to minimize potential problems include bi-annual audiological evaluations, careful auditory training (due to localization difficulties), preferential seating in the classroom, the use of an FM system when listening in noisy environments, and thorough speech and language assessment. Talk with a school audiologist and/or speech language pathologist for other effective management practices.

Conductive Hearing Loss

Conductive hearing loss describes hearing loss caused when sounds cannot pass easily through the outer and middle ear to the cochlea and auditory nerve. This can be because:

- Fluid in the middle ear makes it difficult for the three small bones to vibrate
- Some part of the middle or outer ear has not formed properly
- There is a blockage in the outer or middle ear

Most types of conductive hearing loss are temporary. They are common among young children and there are often medical or surgical treatments that can improve these types of hearing loss. However, some types of conductive hearing loss are permanent. Some children are born without an ear canal; others have no bones in their middle ear. The usual term for this is malformation of the ear. This means the ear has not formed as it should normally. If there is a surgical treatment that can be used, it may be difficult to do until your child is older. Your child’s doctor will be able to give you more information about this.

Sensorineural Hearing Loss

Sensorineural hearing loss involves damage to the nerve cells of the inner ear, the auditory nerve, or the hearing centers of the brain. The nerve cells in the cochlea can be broken, non-responsive to sound or even missing. The nerve that goes to the brain (the auditory nerve) could be damaged, missing or not functioning properly. Also, the part of the brain

that interprets sound may not be able to receive or interpret the signals properly. Sometimes the cochlea never developed at all.

Most sensorineural hearing loss is caused by a problem in the cochlea (inner ear). Most commonly, this is because the hair cells in the cochlea are not working properly. This type of loss is permanent because nerve cells are not able to grow back or be replaced like other types of cells in our body. There is no medical cure.

Mixed Hearing Loss

When a child has a sensorineural hearing loss and a conductive hearing loss in the same ear at the same time it is described as a mixed hearing loss. One example of a mixed hearing loss is when there is a temporary conductive hearing loss caused by an ear infection along with the permanent sensorineural hearing loss. It is important to remain very observant of this. If your child has a sensorineural loss and they develop otitis media (an ear infection), their hearing may be worse and they may hear fewer sounds while they have the infection.

Your audiologist will be able to give you more information about mixed hearing loss. They can also perform tests if you are worried about changes in your child's hearing.

Auditory Neuropathy

Auditory neuropathy is a hearing disorder in which sound enters the cochlea (inner ear) normally but the connection of the signals from the cochlea along the auditory nerve to the brain is not working properly. This condition is sometimes referred to as Auditory Dys-synchrony because it is a disorder of the timing of the auditory nerve. Your child might seem to hear sometimes and not hear at other times. Your child may hear when it is quiet, but not when there is noise. In addition, your child may pass certain types of hearing tests but fail others. In many cases, hearing aids do not help children with auditory neuropathy.



Degrees of Hearing Loss

The degree of hearing loss a person is experiencing is measured by the softest sound the person can hear (measured in decibels, dB) and described by one of the following categories: mild, moderate, moderately severe, severe, or profound. The chart below defines each degree of hearing loss.

Degree of Hearing Loss	Softest Sound Able to be Heard (in decibels)	Frame of Reference
Mild	26-40 dB	Able to hear the loud or more intense vowel sounds, but may miss some of the softer consonant sounds. People with a mild hearing loss may have difficulty hearing soft-spoken people and young children. Also, they may have to ask people to speak up or repeat themselves on occasion.
Moderate	41-55 dB	In addition to missing consonant sounds, vowel sounds then become more difficult to hear. People with a moderate hearing loss often comment that without hearing aids they hear, but can't always understand.
Moderately Severe	56-70 dB	Without hearing aids, speech becomes inaudible, whereas with hearing aids, speech may still be difficult to understand.
Severe	71-90 dB	Without hearing aids, speech is inaudible, but loud sounds like a baby crying or a dog barking are audible. Hearing aids may no longer be enough for people with severe hearing loss.
Profound	91+ dB	Without hearing aids, speech is inaudible, but very loud sounds like a lawn mower or jet airplane are audible. Hearing aids may no longer be enough for people with profound hearing loss.

Hearing Aids



How do hearing aids work?

Hearing aids work by making the sounds going into the ear louder. Hearing aids come in various shapes and sizes. Most have controls that allow the hearing aids to be set to match your child's level of hearing loss and a microphone to receive sounds. The most common types of hearing aids are connected by a tube to an earmold. The earmold is the part of the hearing aid that is inserted into your child's ear and allows the sound to enter the ear. Earmolds should be replaced regularly as your child grows.

Hearing aids can be worn on the body, behind the ear, or in the ear. Some work by vibration. All hearing aids use **digital** technology.

Hearing aids and good listening environments

Being in a noisy place can make listening difficult for children who are wearing hearing aids. Sound vibrations bounce off hard surfaces and make it harder for your child to listen. Hearing aids work best when your child is in a good listening environment. A good listening environment is a room with soft furnishings, carpets and curtains, all of which absorb the bouncing sounds and help cut down on echoes and noise. It is important to be aware of noise from TV's and radios left on in the background that makes it more difficult to hear.

Different Types of Hearing Aids

Behind the Ear Hearing Aid (BTE)

The main part of this hearing aid sits behind the ear. The ear hook of the aid, which is made of a plastic material and has a curved shape, joins the hearing aid to the earmold that fits inside the ear. The ear hook, earmold, and earmold tubing are important parts of the hearing aid system and it is important to check these regularly and replace them if they are cracked, dried out or not fitting well. Some aids can fit with smaller ear hooks for babies and small children. They can also be fit with a locking battery door to stop your child from opening the battery door and getting to the battery. (Batteries are dangerous if they are swallowed.)

- BTE earmolds are made from soft material, which are more comfortable and less easily broken, for physically active children.
- Earmolds will need to be replaced as the child's ears grow. It is not necessary to recase or replace the hearing aid itself.
- BTE hearing aids are often more reliable and less easily damaged.
- BTE hearing aids are easily connected to an FM system or assistive listening device.
- BTE hearing aids and earmolds are available in colors and with accessories designed specifically for children.

In the Ear Hearing Aid

In the ear hearing aids are not generally used for hearing impaired infants and very young children. They are individually molded to fit each child's ear. As the child grows, the ear grows too, requiring frequent remakes or remolding of the hearing aid so that it fits the ear properly. They are more likely to be suitable for older children, whose growth is not as fast. Your child's audiologist will tell you if they will be suitable for your child.

Bone Conduction Hearing Aid

Bone conduction hearing aids work in a different way from other hearing aids. Instead of making sounds louder, they change them into vibrations. The vibrations then pass along the bone in the child's head to the inner ear (cochlea). The vibrations are then converted into sound in the usual way.

The vibrating part of the aid is normally held against the bone behind the ear by a headband or the arm of a pair of glasses. The headband needs to hold the vibrating part in place firmly to allow the aid to work efficiently.

Children who have a conductive hearing loss due to under-formed parts of the ear or who have chronic ear infections usually use bone conduction aids. They can be fit to children of all ages.

Bone Anchored Hearing Aids (BAHA)

Bone anchored hearing aid (BAHA) is another type of bone conduction aid that is surgically implanted into the mastoid bone, just behind the ear, but it is usually not considered for children under three years old. A BAHA can be suitable for children with a mild or moderate conductive hearing loss who have already tried a bone conduction aid. For children with severe hearing loss, there is a body worn version available, which has a separate amplifier.

CROS Hearing Aids

CROS hearing aids can be useful for children who are deaf in one ear but have normal hearing in the other. They work by picking up sound from the bad ear and sending it to an aid on the good ear where it is heard. CROS hearing aids can help a child hear sounds from all directions.

Keeping hearing aids in place

It can be difficult to get hearing aids to stay in place on babies and small children. They can also be difficult to stay in place if parts of the ear are small or malformed. Several devices hold the hearing aid in place for your child. Ask your audiologist for ideas and devices that they may have available.

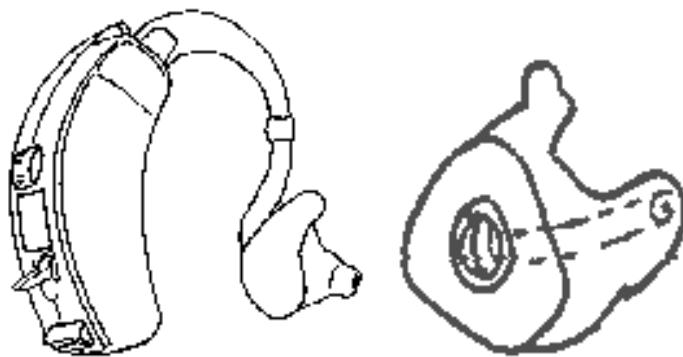
Feedback

Earmolds are a very important part of your child's hearing aids. They are specially molded to fit your child's ear and to help with the child's amount and type of hearing loss. If they do not fit well, the hearing aid can make a high pitched whistling sound called feedback. The high-pitched sound means that some of the amplified sound is leaking out around the earmold and is lost before getting into the child's ear. Babies and young children grow quickly and need new earmolds more frequently so that they fit snug enough.

Sometimes feedback will occur for reasons other than a loose fitting earmold. As your baby grows, movement may cause feedback if they are jumping and tumbling around. Feedback may also occur when objects get close to the hearing aid such as a car seat or hat, or when slightly touching the hearing aid as you hold your baby close. You may need to hold your baby in a different position or turn the volume down on the hearing aid temporarily. Sometimes a hearing aid has internal feedback and must be repaired.

It is always important to make sure you keep up with changing the earmolds as your baby grows. In addition, as you become more comfortable with your baby's hearing aids you will learn what causes the feedback.

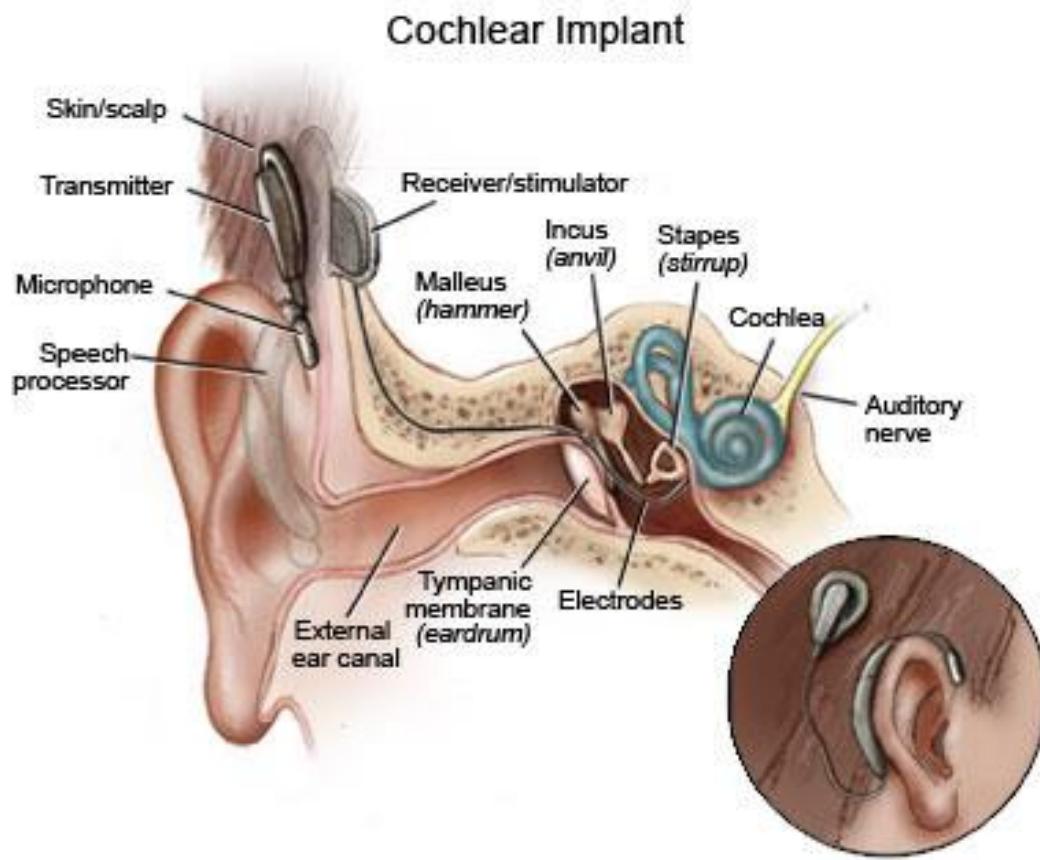
Below is a drawing of an earmold and a behind the ear (BTE) hearing aid with attached earmold.



Cochlear Implants

A cochlear implant is a surgically implanted device that helps overcome problems in the inner ear, or cochlea by bypassing the middle and outer ear. The cochlea is a snail-shaped, curled tube located in the area of the ear where nerves are contained. Its function is to gather electrical signals from sound vibrations and transmit them to your auditory nerve (or hearing nerve). The hearing nerve then sends these signals to the brain, where they're translated into recognizable sounds.

If important parts of the cochlea aren't working properly and the hearing nerve isn't being stimulated, there's no way for the electrical signals to get to the brain. Therefore, hearing doesn't occur. (Sometimes referred to as nerve deafness, this is called sensorineural hearing loss.) By completely bypassing the damaged part of the cochlea, the cochlear implant uses its own electrical signals to stimulate the auditory nerve, allowing the person to hear.



How Does a Cochlear Implant Work?

Cochlear implants have external (outside) parts and internal (surgically implanted) parts that work together to allow the user to perceive sound.

External parts: The external parts include a microphone, a speech processor, and a transmitter. The microphone looks like a behind-the-ear hearing aid. It picks up sounds—just like a hearing aid microphone does—and sends them to the speech processor. The speech processor may be housed with the microphone behind the ear, or it may be a small box-like unit typically worn in a chest pocket. The speech processor is a computer that analyzes and digitizes the sound signals and sends them to a transmitter worn on the head just behind the ear. The transmitter sends the coded signals to an implanted receiver just under the skin.

Internal parts: The internal (implanted) parts include a receiver and electrodes. The receiver is just under the skin behind the ear. The receiver takes the coded electrical signals from the transmitter and delivers them to the array of electrodes that have been surgically inserted in the cochlea. The electrodes stimulate the fibers of the auditory nerve, and sound sensations are perceived.

Cochlear Implant Surgery

The actual surgical procedure, which takes 2-4 hours and uses general anesthesia, involves securing the implant package under the skin and inside the skull, and then threading the wires containing the electrodes into the spirals of the cochlea.

To secure the implant, the surgeon first drills a 3- to 4-millimeter bed in the temporal bone (the skull bone that contains part of the ear canal, the middle ear, and the inner ear). Next the surgeon opens up the mastoid bone behind the ear to allow access to the middle ear. Then, a small hole is drilled in the cochlea and the wires containing the electrodes are inserted. The implant package is then secured and the incision is closed.

After having cochlear implant surgery, a child:

- Will probably be able to go home the next day
- Will have to wear a dressing over the implant area for 24 hours
- May be off-balance or dizzy for a few days
- May experience mild to moderate pain (the doctor may recommend giving pain medications)
- Won't have to have the stitches removed — they're absorbable and dissolve on their own
- Can lie on the side with the cochlear implant after a few days

Two to four weeks after surgery, the sound and speech processor is matched with the implant package and is programmed and fine-tuned to meet the child's individual hearing needs.

Who is best suited for a cochlear implant?

The criteria for cochlear implant candidacy are changing constantly as new technology and research is improved.

Current cochlear implant candidacy for children:

- Age 12 months or older
- Bilateral profound sensorineural hearing loss (thresholds of 90 dB or greater) for children under age 18 months.
- Bilateral severe-profound sensorineural hearing loss for children age 18 months and up
- Limited benefit with appropriately fit hearing aids
- Lack of progress in auditory skill development
- No physical contraindications for placement of the implant (CT scan results)
- Medically cleared to undergo surgery
- Realistic expectations and commitment to follow-up appointments

In order to be considered for implantation, children must receive extensive evaluation by a team of specialists.

A cochlear implant does not provide the user with normal hearing. However, today's cochlear implant systems can enhance auditory information, including speech, environmental sounds and music. The benefits of the cochlear implant vary from person to person and depend on a variety of factors.

Tips on how to get your child to wear their hearing aids & cochlear implants

Introducing hearing aids and cochlear implants to a young child can at times be difficult for both child and parent. Many children immediately accept the hearing aids/cochlear implants and wear them with enjoyment. Some children struggle and complain. It is important to remember that all children are different. Some ideas may work for your child and others may not.

Encourage

When your child first starts wearing the device, it is important that you encourage them to wear their device regularly. This allows them to get used to the device and lets you and the audiologist see how beneficial they are.

Be positive

Your own attitude towards the hearing aids and cochlear implants is very important. If you are positive, your child will be more accepting and positive about wearing them. Remember that you are putting something in your child's ear that was not there before. If you are fitting the device on your baby, the chances are it will not bother them unless they feel that you are nervous or upset.

- Hold the earmold/implant in your hand for a couple of minutes before trying to put them in. This makes them warmer for your child, and can make them feel less strange as they are put in. It also makes them more flexible, easier to put in and more comfortable
- If your child is very young, try putting the device in before they wake up. Remember never to leave babies and young children unattended with the device, as they may put them in their mouths.

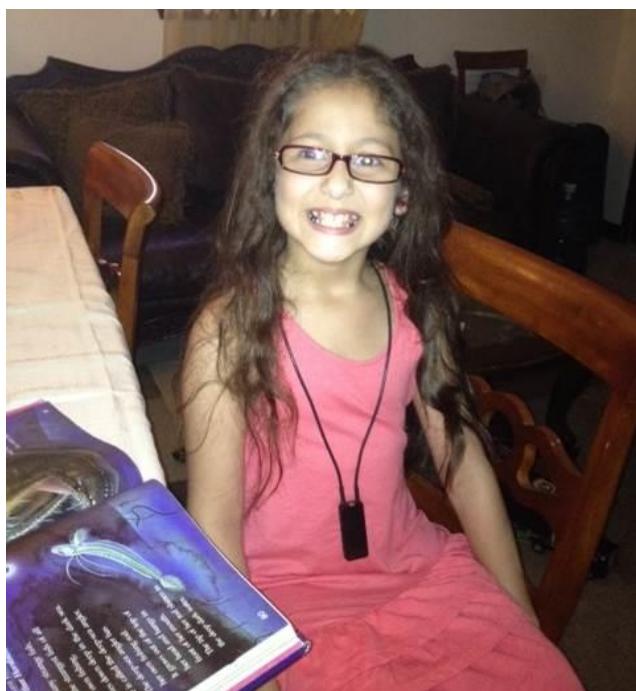
Slowly build up the length of time that your child wears the device. If they are not happy wearing the device, you could start with just a couple of minutes several times a day. If you are feeling stressed because you have already put the device in many times that day and each time your child took them out, then stop trying, and have a rest.

- Otherwise, your child will sense that you are feeling stressed, and this will only make it more difficult.
- Try again later or the next day when you are both feeling a bit more relaxed.
- Distracting your child with a toy can make it easier to put the device in. This can be their favorite toy or a special toy they only play with when they are wearing their aids.
- There are soft toys that wear pretend devices, books, videos and computer software to encourage your child to wear their device.
- Keep the device in a special and safe place. If your child takes the device out, take them to the special place and put the device away. Your child will learn to put the aids somewhere safe when they take them out and you will not have to go looking for them every time they disappear.
- Decorate the device and personalize it. This is also useful to help you tell which one is for the left ear and which is for the right ear.
- You may be able to learn from the experiences of other parents. Meeting other families may also give your child the chance to see other children wearing hearing aids or cochlear implants. This can help them to feel they are not the only one. It may also be useful to meet adults with hearing aids or cochlear implants so children can see that people of all ages wear them.

Assistive Listening Devices

FM system

These devices may be connected to the hearing aid or cochlear implant to improve the ability to hear voices from a distance or in background noise. All hearing aids are limited in their ability to differentiate individual speakers. An FM system consists of a microphone worn by the speaker and wireless sound transmission to a receiver (either an electronic box or an ear-level connector) worn by the child. The most common application is with the classroom teacher; however, there are significant advantages for use with very young children and their parents.



Communication and Language

Developing good communication is vital to all children and their families. Good communication skills allow a child to learn from others and influence the world around them. This is essential to the development of emotional, personal, and social skills. Deaf or hard of hearing children are no different, but sometimes the methods used to communicate are different.

Deaf or hard of hearing children can learn to communicate. The following factors can make it easier for your child to develop good communication and language skills:

- Early and accurate identification of a hearing loss
- Receiving clear, balanced information, advice and support
- Support and commitment from your family
- Early, full-time use of hearing aids when recommended

Communication with your baby

Communication between babies and their parents begins at birth. Babies are born wanting to communicate and wanting you to communicate with them. This early communication is the starting point for learning language.

When your child is very young, communication happens when you are cuddling, caring for, or playing with them. This can involve using words, sounds, gestures, touches, facial expressions, hugs, and games – this is the same for deaf and hard of hearing babies.

It is important to communicate in a way that feels natural and comfortable for you.

Getting started

In the early weeks and months of your baby's life, you and your baby will make many discoveries about how to communicate. Your baby can:

- Respond to your facial expressions and voice
- Kick and move their arms to show excitement
- Look into your eyes, respond to you and watch intently as your facial expressions change

These are normal and enjoyable parts of being with your baby. They are also the start of learning to communicate with each other.

During the first 7-9 months of life, babies are learning how to pay attention to those around them and how to engage in social routines with others. This early social and emotional development is important. Interactions we think of as "baby games" are essential for getting communication started.

Communication with your deaf or hard of hearing baby will start in much the same way as it does with any baby. In the early days, communication will be about using your face, voice, and body to show love and make your baby aware that you are there.

Here are some tips to help you start communicating effectively with your baby:

- Pay attention to your baby's mood. If they are unsettled and agitated, you can respond with a sympathetic face and soothing noises. If your baby is happy and giggly, you can encourage this by using an animated face and voice or signs in response.
- Encourage your baby to look at your face and pay attention to you. They will be interested in looking at you if you use a number of different facial expressions. You can also play games that build anticipation – like “peek-a-boo.” Vary your voice, gestures and sign/cues to encourage your baby to pay attention to you.
- Enjoy your baby. Parents of deaf children say that it can sometimes be hard to focus on ordinary baby routines when they are worrying about the hearing loss. It can really help to talk with other parents and discover the enjoyment they have found as they learn more about having a deaf or hard of hearing child. Everyday care routines are great ways of really communicating with your baby and sharing experiences.
- If your child does not have hearing aids yet, speak in a normal tone and volume with your baby and put your mouth close to your baby's ear as you speak. Once your child has hearing aids, continue to speak in a normal tone and volume.

Responding to your baby's communication

All babies start to communicate before they know any words or signs/cues. When your baby is smiling they are saying, “I like that” or “play that game again.” When your baby is crying they are saying, “I'm hungry” or “My diaper needs to be changed.”

From the earliest days, babies pay attention to important voices. They discover their own voices and play with sound in squeals, grunts, coos, and gurgles. Later on, babies discover that they can join sounds together to babble. Babies can also start to join hand movements together to create hand babble. When babies start to point or reach, these gestures may mean, “I want that” or “look at me.”

You and the other members of your family can help get communication started by following two simple guidelines – you are likely to do these things naturally anyhow.

- **Recognize** your baby's attempts to communicate. You can do this by being aware of their facial expressions, the way they move their body and the noises they make
- **Respond** to these attempts with appropriate facial expressions, noises, words, gestures or signs/cues

Recognizing your baby's attempts to communicate

You will notice over time that your baby uses a variety of ways to express their thoughts and feelings. These might include:

- Gestures
- Vocal sounds
- Body movements (kicking, getting excited)
- Eye gazes
- Reaching
- Cries
- Vocal protests or whines
- Smiles
- Anticipating (looking excited when they know a game is going to start)
- Watching
- Touching
- Facial expressions

Take some time to observe your baby – it will help you communicate with your baby better. Some of the questions you can ask are:

- How is your baby communicating without words?
- What do you think the baby means?
- Are they asking for attention or help?
- Do they want you to look at what they are looking at?
- Do they want more of something or want you to stop?
- Are they trying to have fun with you?
- Do their cries seem to have different meanings?

A smile, a cry, a gesture, or a look – all can communicate thoughts or ideas. It can take many repetitions of a gesture, look, word, phrase, or sound before a child begins to “break the code” between communication attempts and real meaning. Communication surrounding the child in his or her natural environment is the basis for a child’s language development. Two-way communication, responding to your child and encouraging your child to respond to you, is the key to your child’s language development. When a child has a hearing loss, one avenue of communication input is impaired.



Responding to your baby's attempts to communicate

Responding to your baby's attempts to communicate is important. It lets your baby know you have heard them, helps them to realize that different ways of communicating are effective, and encourages them to use the same method again.

Your baby is learning that communication is a two-way process and that it is important to take turns. Babies love to communicate. Because your deaf or hard of hearing baby finds it difficult to hear you, you may have to try different ways to ensure that communication remains satisfying. You should try to stay close, use a pleasant but clear voice, and talk about what your baby is interested in.

The most important thing in the beginning is to be sure that your baby knows you have responded. This will help them begin to predict that you will respond, which makes conversation exciting for both of you. The words, gestures, or signs/cues will come in time.

Tiny babies make many funny sounds, and it is not always clear how to respond. However, as a parent, you have many ways of showing your baby approval and support. You can:

- Maintain eye contact while you communicate with your baby
- Smile and nod
- Use facial expressions
- Speak or sing a song to them
- Wait expectantly for more communication

One way to be sure you and your baby understand each other is to establish joint attention. If your baby points to something, you point too, before you try to add to the communication.

With a mild hearing loss or hearing loss in just one ear, a child will not hear as well as normal when a person is speaking from another room or in a noisy car. Incidental conversations and snippets of language will not be overheard. The fullness of language and social skills may be affected even though the child appears to "hear". Hearing aids can help, but not solve all of the child's difficulties perceiving soft or distant speech. Children with greater degrees of hearing loss will have greater hearing limitations that require more intensive attention if they are to progress in learning language, either through visual or auditory means. No matter what the degree of a child's hearing loss, parents need to decide how to adapt their normal communication style to meet the needs of their baby with hearing impairment.

There are different ways to communicate and different philosophies about communication. Choosing one manner of communication over another is a personal decision made by the family and does not need to be totally dependent upon a child's amount of hearing loss.

IT'S NOT ABOUT HEARING LOSS, IT'S ABOUT COMMUNICATION

As you think about how your family communicates now and how you would like to communicate with your child in the future, you are thinking about choosing building blocks of communication. Consistency is key to any communication methods you choose.

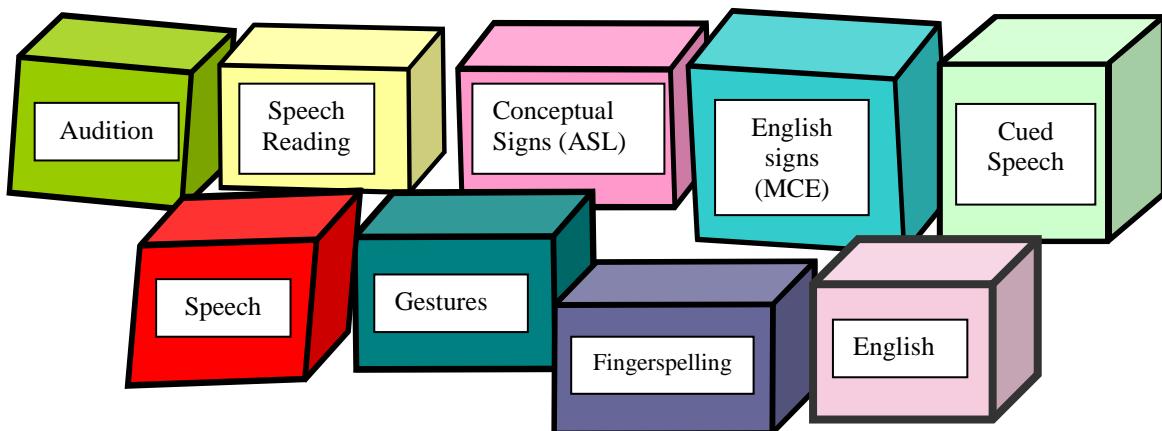


Communication Building Blocks

All children develop language skills over time. It is through the daily practice of language in all activities that you should expect children to become effective communicators. All methods of communication require a commitment on your part in order for you to be able to communicate with your child. That everyday commitment to communicating is the key to your child's language development.

Communication Features

Communication features can be thought of as building blocks to effective communication. They may combine into different communication options or methods. The five communication options described here include American Sign Language, Total Communication, Cued Speech, Auditory-Oral, and Auditory-Verbal. Think of each of these options as stacks of blocks made up of combinations of different communication features.



Audition: Audition is simply defined as the sense, ability or power of hearing.

Speech Reading: Speech reading, or lipreading, is a technique by which a person attempts to understand speech by watching the speaker's mouth and facial expressions. Some of the sounds in the English language can be understood by watching the mouth, but many cannot. In the best environment (good lighting, clear view of the speaker's face, etc.) only approximately 40% of the English sounds are visible. Thus, on average, a good speech reader may only be able to distinguish 4 to 5 words in a 12-word sentence.

Conceptual Signs (ASL): American Sign Language, or ASL, is often thought of as the language of Deaf people. This complete conceptual visual language does not require the use of spoken words or sounds. Contrary to the belief of many hearing individuals, ASL is not a way of using gestures to represent English. ASL has its own vocabulary and all of the language components of a true language, including grammar and sentence structure. It is a completely distinct language from any spoken language, including English.

English Signs (MCE): There are a number of communication techniques that code the English language visually. Manually Coded English (MCE) is a system of signs (many of which are borrowed from ASL) presented in English word order that are based on words as opposed to conceptual meaning. MCE is a visible representation of spoken English and, therefore, it is not a language.

Cued Speech: Cued Speech is a visual mode of communication that uses hand shapes and placements in combination with the mouth movements of speech to make the phonemes of a spoken language look different from each other. The cueing of a traditionally spoken language is the visual counterpart of speaking it. Cueing makes available to the eye(s) the same linguistic building blocks that speaking avails the ear(s). Until the advent of cueing, the term spoken language accurately described what had been the only way of distinctly conveying these building blocks: speaking. In fact, until that time, the sounds of speech and the building blocks were thought of as one and the same.

Cued Speech was designed to help eliminate the difficulties of English language acquisition and literacy development in children who are deaf or hard-of-hearing. Results of research show that accurate and consistent cueing with a child can help in the development of language, communication and literacy. Cued Speech is relatively easy to learn. Parents may use cues to share their families' language efficiently and completely with their child. Cued Speech has been developed for use in 60 other spoken languages and dialects.

Gestures: Natural gestures and body language consist of things that you would normally do for a child to help them understand your message.

Finger Spelling: Finger spelling is also known as a visual alphabet. Finger spelling is used mostly as a means to introduce new or unknown vocabulary words to individuals that sign as not all words have defined signs. This is especially true of proper names or specialized vocabulary, such as in the sciences.

Speech: Speech is a highly complex method of communication. Normal hearing individuals express much emotion through the intonation patterns of speech. Changing pitch at the end of a spoken statement typically means that a question has just been asked. Pitch, rate, and loudness all vary as we speak and can change depending upon the words preceding and following. These variations may be difficult or not possible to perceive depending upon the ability of the individual with the hearing loss. It can take intensive work and time for a child with hearing loss to be able to discriminate these tiny speech differences through hearing alone or in combination with speech reading. Technological advances in hearing instrumentation may allow many persons who are profoundly hearing impaired to access the speech signal through audition.

English: English is one of many languages known for having distinctive aspects. Receptive language refers to how many words or how much conceptual language a person understands. Expressive language refers to how a person is able to share ideas or feelings in any method or mode of communication. Factors that may impact expressive language development include pragmatics, content and form. One of the forms of language is how the words are put together to make sentences. This is also called the syntax of a language. English and American Sign

Language differ in the order in which words or concepts are placed in a single sentence. Pragmatics refers to the social use of language and how you express yourself appropriately in different social situations. The content of a language refers to meaning. Persons who are fluent in English will have a higher probability of becoming fluent readers of the English language.

Children are “wired” to absorb the language experiences that surround them and develop communication and cognitive skills, with little apparent “teaching” needed from adults. A child with hearing loss is just as “wired” to learn language as the child with normal hearing, however, extra effort is required by family members and caregivers to expose the child to meaningful experiences that will foster early development.

Every child has areas of strength and non-strength, just as every family has different communication dynamics. Only you will know what feels right as you select communication features to match your child’s needs and your family. The child’s personality, learning style, persistence, and motivation all will play an important part in communication growth. These are also qualities that we discover about our children as we interact with them in many situations. Hearing evaluations need to be repeated as your child gets older in order to learn precisely how much residual hearing exists. The communication features you select when your child is very young (i.e. 6 weeks old) may or may not fit well with these qualities and the hearing loss information that becomes apparent when the child is 8 months old. Amplification choices may change as well due to progression of the degree of hearing loss, increasing precision in hearing measurement, or technological advances in hearing instrumentation. The need to adjust your choice of communication features or options is a real possibility as you learn more about your child.



Making Communication Choices

Communication features can be combined into different communication methods. There are many philosophical differences about the superiority of one communication option over another. The bottom line is this – the best communication option for your child is the one that caregivers are willing and able to use comfortably and consistently and that meets the communication development needs of your child. No specific method will result in successful learning outcomes if caregivers and family members do not surround and immerse the child in whatever communication features comprise the method. In contrast, not every communication option will produce a successful developmental outcome, even if all caregivers are highly committed to its consistent use. Consider your initial selection of communication features as building a foundation in which you are supporting your child's development of communication, cognitive, and social skills. Other blocks, or communication features, can be added to this foundation, or blocks can be substituted as needed.

American Sign Language

American Sign Language (ASL) is a visual language. With signing, the brain processes linguistic information through the eyes. The shape, placement, and movement of the hands, as well as facial expressions and body movements, all play important parts in conveying information. Providing full visual access to communication and language, ASL can convey subtle, complex, and abstract thoughts. This complete visual-spatial language does not require the use of spoken words or sounds. Instead it manipulates space, movement and signs to efficiently and completely present information. In short, ASL can communicate anything. ASL is a language with its own unique rules of grammar and syntax. Like all languages, ASL is a living language that grows and changes over time. American Sign Language, or ASL, is the language of the American Deaf Community.

Bilingual/Biculturalism is designed to give children with hearing loss fluency in two languages – American Sign Language (ASL) and English or the family's native language. It also seeks to provide children with knowledge about and acceptance into two cultures – Deaf and hearing. In the Bilingual/Bicultural communication option, also called Bi/Bi, ASL is usually taught as the child's primary or first language. English or the family's native language is taught as the child's second language with emphasis on the written form of the language. This option consists of two main communication features: ASL and the written form (sometimes the spoken form) of a language such as English and is one of the newer education approaches appearing as a recent trend of education for children with hearing loss.

Total Communication

Total communication is an approach of communication and education for children with hearing loss that uses a combination of communication options, including oral and manual techniques. In this option, children and families are encouraged to use a spectrum of communication techniques. Speech reading, speech, use of residual hearing, cued speech, signs, natural gestures and body language are all encouraged. Personal amplification (hearing

aids, FM systems, cochlear implants) are considered important in most total communication programs as children are encouraged to make maximum use of their residual hearing. Initially, ASL was not included in total communication programs, as the importance of learning English as the first language was stressed. In recent years, however, as ASL has gained more respect in educational settings, this language is being introduced into more total communication programs as a second language.

Manually Coded English (MCE) is a system of signs (many of which are borrowed from ASL) presented in word order that are based on words as opposed to conceptual meaning. MCE is a visible representation of spoken English and, therefore, it is not a language. Speech reading, a technique by which a person attempts to understand speech by watching the speaker's mouth and facial expressions, is encouraged in most Total Communication programs. Cued Speech is a visual code based on the sounds of words that can be used in TC programs to enhance speech reading or literacy development.

Cued Speech

Cued Speech is a system of eight hand shapes that represent groups of consonant sounds and four hand placements that represent groups of vowel sounds used in combination with the natural lip movements of the speaker. The hand shapes and placements are grouped in sets that do not look alike on the lips, to make speech visible and clear to the cue-reader. R. Orin Cornett, Ph.D. developed the system in 1965 to make it possible for deaf children to acquire naturally, in their homes, the language they will eventually be expected to read and write. Cued Speech has been adapted for use in more than 60 spoken languages. Cued Speech is not a language; it conveys the language, including the vocabulary, syntax, and grammar, that is being spoken. Parents of young deaf children are encouraged to use voice when they cue, to take advantage of any residual hearing their children have; however, transliterators who cue for students in the classroom, do not use voice. The system has been used successfully with children who have no residual hearing, cochlear implants, hearing aids, and auditory neuropathy. Cued Speech is used as a tool to assist with speech reading spoken languages. This system is believed to the development of reading or literacy through encouraging a child to learn the spoken language as his or her first language. A cue reader has access to 100 percent of spoken language through vision alone. Results of research studies have consistently shown that native cuers with no co-existing learning or information processing abilities have achieved literacy levels comparable to their hearing peers. Use of personal amplification such as hearing aids, FM systems, or cochlear implants is also important with this approach.

Auditory-Oral

The Auditory-Oral option emphasizes maximum use of residual hearing through technology (hearing aids, FM systems, cochlear implants) and auditory training to develop the speech and communication skills necessary for full involvement in the hearing society. The focus of this option is to use the auditory channel to acquire speech and oral language and is based on the assumption that most children with hearing loss can be taught to listen and speak with early intervention and consistent training to develop their hearing potential. Unlike the Auditory-

Verbal option, the Auditory-Oral option includes the use of speech reading and natural gestures. Manual forms of communication, such as Manually Coded English and American Sign Language, are not encouraged. Natural gestures and body language are accepted. Thus, the Auditory-Oral option consists of four main communication features: speech, audition, speech reading, and gestures or body language. The Auditory-Oral option relies on the user to have amplified residual hearing of a sufficient enough degree to allow the development of an auditory feedback loop (perceiving one's own voice which aids in monitoring speech production). The greater the amount of residual hearing an individual has the better the chance for success with the Auditory-Oral option. A very important key to the potential success of Auditory-Oral option is optimal amplification of residual hearing or use of a cochlear implant. Thus, a strong working relationship with an audiologist is vital. Speech reading is an important communication feature in the Auditory-Oral option. In the best environment (good lighting, etc.) only approximately 40% of the English sounds are visible. Much of the meaning of conversation is deduced through context and guessing based on world knowledge and conceptual and syntactic language proficiency. The ability to speech read has been shown to be unrelated to intelligence or motivation. Due to shifting dynamics of conversation between speakers or in a group discussion classroom situation, it can be very difficult to keep up with the conversation, even for a very talented speech reader.

Auditory-Verbal

The primary objective of the Auditory-Verbal option is to "equip the child to integrate into classrooms and society at large." This communication option uses the child's residual hearing, hearing technology, and teaching strategies to encourage children to develop listening skills to enable them to understand spoken language through amplified hearing or cochlear implants in order to communicate through speech. The emphasis is on development of speech and language through auditory pathways, or hearing. Speech reading, signing, and natural gestures and body language are discouraged. Thus, the Auditory-Verbal option consists mainly of two communication features: audition and speech, with the use of residual hearing with technology and amplification being a vital component.

In the Auditory-Verbal option, the child is expected to rely on audition alone during specific teaching times. One to one teaching with a therapist trained in the Auditory-Verbal options with parents present, and then daily one to one instruction time with the parents, is vital. Use of the hand cues during formal teaching times has been used in the Auditory-Verbal option. These hand cues may consist of one or more of the following techniques: the therapist, parent, or caregiver covering his/her mouth when the child is looking directly at the adult's face; the adult moving his or her hand toward the child's mouth in a non-threatening and nurturing way as a prompt for vocal imitation or as a signal for turn taking; and the adult "talking through" a stuffed animal or other toy placed in front of the speaker's mouth. Currently, emphasis is on more subtle signals such as encouraging the child to look at something other than the speaker's mouth when speaking and naturally covering the mouth when speaking. It is not expected that the parents or caregivers would cover their mouths during all daily living activities outside of the direct instruction time.

No matter which communication
features you select, remember

it's not about hearing loss,

it's all about COMMUNICATION

Deaf Culture

The difference between hearing culture and Deaf culture are quite interesting.

What is Deaf Culture?

Although some may consider being deaf or hard of hearing a physical difference, many consider it to be a cultural/linguistic identity. As Carol Padden and Tom Humphries described in their book, *Deaf In America: Voices From A Culture*, "we use the lowercase deaf when referring to the audiological condition of not hearing, and the uppercase Deaf when referring to a particular group of deaf people who share a language-American Sign Language (ASL) - and a culture...fewer than 10 percent are born to parents who are also Deaf. Consequently, in contrast to the situation in most cultures, the great majority of individuals who form the Deaf community do not join it at birth."

Although members of the Deaf Community are very unique and differ in many ways, there are some general commonalities. American Sign Language (ASL) is the preferred mode of communication. There is a deep respect for Deaf history, residential schools, Deaf associations, and social ties. Again, from Padden and Humphries: "Deaf Culture is a powerful testimony to both the profound needs and the profound possibilities of human beings. Out of a striving for human language, generations of Deaf signers have fashioned a signed language rich enough to mine for poetry and storytelling. Out of a striving to interpret, to make sense of their world, they have created systems of meaning that explain how they understand their place in the world. That the culture of Deaf people has endured, despite indirect and tenuous lines of transmission and despite generations of changing social conditions, attests to the tenacity of the basic human needs for language and symbol."

Why is Deaf culture important to parents?

When we are told our child has a hearing loss, we typically are receiving this news from hearing medical professionals. They are usually very skilled and knowledgeable about the diagnostic process and perhaps the medical interventions that a parent can pursue. However, that medical professional may have limited knowledge or training about Deaf Culture and may not understand or value the option of using sign language or participating in the Deaf Community. It means that we as parents may need to look elsewhere to understand all the choices in communication before making decisions and recognize each strength and weakness when listening to advice.

Striving to understand Deaf Culture can be a critical step forward in showing respect for a community with a rich history. There are many stories and books written by Deaf adults who have felt cheated by not being exposed to the Deaf Community or sign language when growing up. Some will describe "coming alive" when first entering a residential school for the deaf, seeing sign language after being raised orally, or attending Gallaudet University in Washington, D.C. It is possible your child will struggle with his own identity at some point. You may decide to help shape your child's identity by involving him in the Deaf community and using sign language in your home. On the other hand, you may decide not to use sign or attend Deaf events. It is your family's choice. One day, your child may question why you made the decisions

you made. The choice, the decision, and your answer to your child's questions are yours and yours alone.

Whether you actively involve your child in Deaf social activities, schools, or not, you will come in contact with members of the Deaf Community. Using the right terminology is another important way to show respect. The terms "hard of hearing" and "deaf" can be confusing to parents. As described in the National Association of the Deaf's "*Info to Go*", "how a person 'labels' themselves in terms of their hearing loss is personal and may reflect identification with the deaf community or how their hearing loss affects their ability to communicate... 'hard of hearing' can denote a person with a mild or moderate hearing loss. Or it can denote a deaf person who doesn't have/want any cultural affiliation with the Deaf community."

Because in the Deaf Community deafness is regarded to be a cultural phenomenon, rather than a disabling condition, it can be considered offensive to use the words "hearing impaired" or "disabled." The terms "deaf" or "hard of hearing" are more acceptable.

Deaf culture is also relevant in that many of the decisions we make as parents have a Deaf perspective. Where your child attends school, what communication choice you make, whether you choose to pursue a cochlear implant all may have a Deaf Culture perspective. In weighing options for your child, it is important to know how some members in the Deaf Community view that decision so you understand the reactions you may encounter later on.

Benefits of the Deaf community

The Deaf Community can offer many benefits. Membership can offer improved self-esteem, sense of pride in one's history, respect and use of sign language, emphasis on one's strengths, community acceptance, and fellowship. There are many Deaf churches, Deaf political and social organizations. Knowledge of, or your child's participation in, events hosted by such organizations can provide modeling of sign language by native users, adult mentoring, and your child's feeling of support by others like himself. Many members of the Deaf Community are well informed about current technology/devices that can be of benefit in everyday life, simply because they use them often.

Regardless of a parents' degree of involvement in the Deaf Community, adult role models who are deaf or hard of hearing can have a huge positive impact on the life of child. All children want to know they are not alone. Parents who meet adult role models can be assured their child will have a successful future. Parents are strongly encouraged to seek out individuals who are willing to share their precious gift of life experience to foster their child's self-esteem.

Whether to sign or not?

There has been a passionate struggle as to what is the best communication method for a child who is deaf. Those who are members of the Deaf Community would support that sign language is a child's natural language and exposing a child to ASL will make that child's acquisition of language and academics easier. However, there is also an opposing argument made that children

who are exposed to sign language will become dependent on their vision, use their residual hearing less, and would then have poorer speech.

That discussion still continues today. Knowing this, parents have the extremely difficult task of deciding how to communicate. Who is "wrong" and who is "right" really is not the issue. What is most important is that the choice(s) is beneficial for the child and for the family. Whatever works for your child is what makes the choice right. It is also possible to land somewhere in the middle by using multiple modalities.

Bridging the Deaf community and the hearing world

Many individuals have successfully participated in the Deaf Community, but have used their speech, cued speech, hearing aids, or cochlear implants. It is possible to move between the Deaf and Hearing worlds and find acceptance. As in any community, there are those with strong opinions, but it is very possible to find individuals who will support you. You just need to look. Hands & Voices, a parent-to-parent support organization, encompasses all and celebrates the rich, diverse community we share. Contact information for the Louisiana chapter can be found in the Resource section of this Resource Guide.

Tips on Reading with Your Child

Reading to your child is a great way to help the brain develop, which is why it's great to try to read to your child everyday! When your child hears or sees you say/sign/cue words over and over, the language center of the brain is stimulated. It is important to pick books that you both enjoy so it's a fun activity for the both of you! Here are a few tips on reading with your deaf or hard of hearing child:

- **Choose books that rhyme or repeat the same sound**—they are great for helping your child learn the sounds that letters and words make.
- **Read the same story over and over again**—this helps your child catch words he/she may have missed before.
- **Make sure you are positioned to where your child can see your face**—this helps your child follow along with the story.
- **Have your child interact with the story by turning pages, touching pictures, and lifting flaps**—this gives your child practice using his/her hands, which gets them ready to sign/cue.
- **Talk about the story as you go and use stuffed animals to act out the story**—this helps your child connect ideas of the story with your experiences.
- **Be dramatic with your facial expressions, signs and/or cues** —this helps your child distinguish different characters in the book.
- **Have fun with your child!**



Infant/Toddler Services in Louisiana



EarlySteps

Children from birth to age three with a confirmed bilateral hearing loss are eligible to receive professional help through **EarlySteps**, a statewide, community-based early intervention network that provides multidisciplinary services for infants and toddlers with hearing loss. **EarlySteps** is administered through Part C of the Individuals with Disabilities Education Act (IDEA). This federal law provides specific legal rights to each eligible child and their family. These services are designed to meet the special, individualized needs of your child and family. Families can choose not to participate in this statewide system. Private agencies are also available to assist families if they so wish. For more information on eligibility guidelines for EarlySteps, visit the website at:

www.earlysteps.dhh.louisiana.gov

or call: 225-342-0095

System Point of Entry (SPOE)

Once the audiologist confirms your child's hearing loss, the audiologist will put you in touch with a system point of entry (SPOE) that will process your child's eligibility for **EarlySteps** services. In the **EarlySteps** system, your intake coordinator and other appropriate providers will assist you in the development of a plan that describes the early intervention services your child will receive from **EarlySteps** and other providers, access to community resources, and information about hearing loss. A Family Support Coordinator (FSC), and perhaps other service providers, will work with you to develop an Individualized Family Service Plan (IFSP).

Individualized Family Service Plan (IFSP)

The IFSP is the written plan that identifies the outcomes that you want your child to work toward and describes the strategies (services and activities) to help achieve those outcomes. Through the ongoing process of planning and adjusting of outcomes, services and activities to meet the changing needs of your child and family, the IFSP serves as a

guide for you and the professionals working with you and your child. You, as parents, are essential participants in the development and revisions of the plan, as well as activities for the program developed for your child. IFSP meetings will be conducted in your native language. Cultural preferences of you and your family will be respected. You may have family members, friends, parents of other children, and other professionals attend the IFSP meetings if you wish.

Your IFSP includes:

- Family information (optional)-information you wish to share about your family's resources (*e.g.*, family members who can help carry out intervention activities), priorities (*e.g.*, outcomes for your child that are most important to you), and concerns about your child
- A description of the services and activities, which will help toward achieving these outcomes
- When early intervention services and activities should start and end, and where and how often the child and family will participate in these
- Services and activities which are to be natural learning experiences occurring in natural environments
- Who will be responsible for providing the services and activities (*e.g.*, professional service providers)
- The name of the Family Support Coordinator working with you
- How the services will be paid for (*e.g.*, funding sources such as insurance, federal and state funds, local funds, and family cost participation which will be based on family income and family size.) **EarlySteps** is the payer of last resort
- A transition plan to help you and your child when you are moving to another community, changing programs, or moving out of the **EarlySteps** system to other services when your child is age three

Contact **EarlySteps** in your local community to access information on transition to preschool service at age three

EarlySteps services available:

- Audiology
- Assistive Technology Services/Devices
- Family Training/Counseling
- Health/Nursing Services (only to enable an infant /toddler to utilize other EarlySteps services)
- Nutrition
- Occupational Therapy
- Physical Therapy
- Psychological Services
- Service Coordination
- Sign Language and Cued Language Services
- Social Work
- Special Instruction
- Speech-Language Therapy
- Transportation
- Vision

Helpful Tools for Making Decisions

Often parents feel overwhelmed when considering communication methods and an intervention program for their child. It may help to realize there is no one approach that is right for all children. There are successful people using each of the approaches and even some who use a combination of approaches. Gathering information about the resources that are available in your community and state will help you make decisions that are “right” for your child and family. We encourage you to visit programs and to see the methods in practice. Ask for an explanation of each method from those who actually practice it and think about whether it feels right for you and your family.

As you visit the programs in your area, it will be important to ask questions. Do not be afraid or embarrassed by any questions you may have. The answers you receive will help you understand and compare the different services and communication methods. Once you understand the options, you can make a well-informed decision. Use the questions on the following pages while visiting programs and meeting providers. These questions are not meant to be comprehensive, but rather they are intended to open up the lines of communication between professionals and parents.

Key points to consider:

1. Know about your child's hearing. How much they hear with and without hearing aids or other devices
2. Become familiar with the rights for your child and family. Federal and state laws specify your rights to confidentiality, early intervention and educational services for your child and timely resolution of disagreements and complaints.
3. Understand which agency is responsible for the different services you are interested in and contact them for information. If you do not know how to contact them, ask for assistance from your physician or contact the Louisiana Department of Health and Hospitals, Office of Public Health, Hearing, Speech and Vision Program (504) 568-5028 or Early Steps (toll free) (866) 327-5978.
4. Talk to other families of children who are deaf or hard of hearing.
5. You know what your child needs more than others. You are your child's best advocate.

Questions parents can ask Providers:

- What experience do you have with children who have a hearing loss?
- What resources are available to reinforce your services?
- What is the impact of services on the siblings and extended family?
- What are the long-term goals of the services you recommend?
- What is your definition of success for children with hearing loss?
- What are your licenses, certifications, and/or credentials?
- What is your philosophy regarding communication and a child with a hearing loss or who is deaf?

Questions parents could ask their audiologist:

An audiologist may describe hearing loss, explain hearing results, recommend hearing aids or a cochlear implant, and may dispense and fit hearing aids or provide auditory training and discuss communication options. Not all audiologists are specifically trained to evaluate and provide services to infants and young children. It is recommended that you seek an audiologist who has experience and training in providing those services.

- How much hearing loss does my child have? Please explain the terms: sensorineural, conductive, mixed, mild, moderate, severe, profound, auditory neuropathy.
- Is the loss permanent? Does my child need more testing? How often should my child's hearing be tested?
- Can you tell if my child's hearing loss will get worse or change?
- Do both ears have the same hearing loss?
- How will the hearing loss affect my child's speech and language development?
- What could have caused my child's hearing loss?
- Would you suggest genetic counseling for our family?
- May I have a copy of the hearing test results?

Questions about hearing aids and cochlear implants:

- Does my child need a hearing aid? What are my choices? Should he or she have a hearing aid in both ears?
- How much do hearing aids cost? Can I get help to pay for the hearing aids?
- Can you help me contact a program that can lend me hearing aids?
- What will my child hear with the hearing aids?
- How often will my child need new hearing aids or parts?
- What are the parts of a hearing aid that may need to be replaced?
- What should I do if my child does not want to wear the hearing aids?
- With my child's hearing loss, should I consider a cochlear implant? Where can I go for more information?

Beyond Early Intervention

Planning for the transition from early intervention (Part C) to preschool services (Part B) is a very important step in the life of your child and family. Eligible children can receive special services and assistance (special education and related services) under this law. At the age of three there will be a transition process, which may include:

- A change of people who have been serving your child
- A change of location of services
- A change in which part of the law oversees services in the Individuals with Disabilities Education Act
- A change from an IFSP (Individual Family Service Plan) to an IEP (Individual Education Plan)
- A change from goals that are family directed to educational need based goals

Your Early Intervention Service Coordinator will assist you during this transition period. Transition planning will begin months before your child enters preschool so that you have adequate time to explore your options and feel comfortable with your child's placement.

The first step in the transition process involves a transition meeting with your Early Intervention team. At this time the procedures in your district will be shared with you. As part of this process you will be referred to your local school district's Child Find. Your Service Coordinator can make this referral.

Child Find is responsible for assessment and identification of young children who might be eligible for services under IDEA. The team's evaluation may include any or all of the following: health, vision, hearing, motor, social/emotional, general development, and communication skills. These tests must be conducted in your child's preferred mode of communication (spoken language, sign language or a combination). These evaluations are offered by the district at no cost to you as the parent. You should also share any current assessment data that you have with the team. They may decide to include some of the data into the overall assessment.

There are guidelines in the law covering the different steps required to complete a child's transition between services. This period is filled with assessments needed by the school, visiting school programs, learning even more about how one's child learns and communicates best... so most families would benefit from even more transition time to mull over decisions and meet the key people who will be involved in their child's life in school. This additional time can greatly ease pressure on parents as well as allow for more time for the family and the school personnel to develop a positive relationship. Once the evaluations are completed, a team will be convened. You are an important member of this team. At this meeting the assessment results will be shared and discussed as they relate to your child's educational needs and subsequent placement. Once your child has been determined eligible for services, the IEP team will develop an IEP (Individualized

Education Plan) for your child. This plan will state the goals for your child and the services that will be provided by the school.

The team needs to include parents and/or guardians, first of all. A representative must be present who can make decisions on behalf of the lead educational agency (LEA), otherwise known as the school district. A deaf education teacher is generally present on behalf of the future service providers and the district. One regular education teacher must also attend. School audiologists and speech therapists should also attend. If a child has additional health care needs, other professionals may also be invited. Childcare providers or extended family or others, invited by the parents, with a special interest or knowledge of the child may attend, including an advocate or another adult to support the parents and take notes at the parents' discretion.

There are many options for educating your child. The law mandates that a continuum of services be discussed. As your child moves into Part B services, you will work with a team of professionals to develop a plan (IEP) that addresses the unique needs of your child. A part of this process could be developing a Communication Plan for your child, which ensures among other things that all educational options have been explored.

Items to consider on a Communication Plan are:

- Student's primary communication mode(s)?
- The IEP team has considered the availability of deaf/hard of hearing adult role models and peer group of the student's communication mode or language.
- A statement documenting that an explanation was given of all educational options provided by the school district and available to the child.
- Teachers, interpreters, and other specialists delivering the communication plan to the student must have demonstrated proficiency in, and be able to accommodate for, the child's/student's primary communication mode or language.
- The communication-accessible academic instruction, school services, and extracurricular activities the student will receive have been identified.

The transition time between early intervention Part C and preschool services Part B can feel overwhelming but the key to ensuring that this transition goes as smooth as possible is having time to learn and prepare.

Louisiana Deaf Child Bill of Rights

La R.S. §1960. The Deaf Child's Bill of Rights; legislative recognition

A. The Louisiana Association of the Deaf and the United States Congress recognize that children who are deaf, hard of hearing, or deaf-blind who utilize one or more modes of communication have the same rights and potential to become independent and self-actualizing as children who are not deaf, hard of hearing, or deaf-blind. Therefore, the legislature recognizes the Deaf Child's Bill of Rights as follows:

(1) Public schools and all publicly funded early intervention programs shall provide children who are deaf, hard of hearing, or deaf-blind appropriate screening and assessment of hearing and vision capabilities and communication and language needs at the earliest possible age and the continuation of screening services throughout the educational experience.

(2) Public schools and all publicly funded early intervention programs shall provide children who are deaf, hard of hearing, or deaf-blind with individualized and appropriate early intervention to support the acquisition of solid language bases developed at the earliest possible age.

(3) Public schools shall inform the parents or guardians of children who are deaf, hard of hearing, or deaf-blind of all State Board of Elementary and Secondary Education policies and regulations relative to placement considerations and options available to children who are deaf, hard of hearing, or deaf-blind and provide opportunities for parents and guardians to fully participate in the development and implementation of their child's education plan.

(4) Public schools shall strive to provide children who are deaf, hard of hearing, or deaf-blind opportunities to meet and associate with adult role models who are deaf, hard of hearing, or deaf-blind to learn advocacy skills, including self advocacy.

(5) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind opportunities to meet and associate with their peers in the school environment and during school sponsored activities.

(6) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind access to qualified teachers, interpreters, and resource personnel who communicate effectively with each child in that child's mode of communication.

(7) Public schools shall include a communication plan in the Individualized Education Program of every student with an exceptionality who is deaf, hard of hearing, or deaf-blind. Where appropriate, public schools shall include a communication plan in the Individual Accommodation Plan for a student who is deaf, hard of hearing, or deaf-blind.

(8) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind placement that is best suited to each child's individual needs, including but not limited to social, emotional, and cultural needs, with consideration for the child's age, degree and type of hearing loss, academic level, mode of communication, style of learning, motivational level, and amount of family support.

(9) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind individual considerations for free, appropriate education across a full spectrum of educational programs.

(10) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind full support services

provided by qualified professionals in their educational settings. The state Department of Education shall work with local education agencies to ensure technical assistance is available to support public school governing authorities in meeting the needs of children who are deaf, hard of hearing, or deaf-blind.

(11) Public schools shall provide children who are deaf, hard of hearing, or deaf-blind full access to all programs in their educational settings.

(12) Deaf, hard of hearing, and deaf-blind children are entitled to have the public fully informed concerning medical, cultural, and linguistic issues of individuals who are deaf, hard of hearing, or deaf-blind.

(13) Public schools, where possible, shall have deaf and hard of hearing adults directly involved in determining the extent, content, and purpose of all programs that affect the education of children who are deaf, hard of hearing, or deaf-blind.

B. (1) Public school governing authorities shall comply with the provisions of this Section, in accordance with applicable state and federal law, policy, and regulation.

(2) Nothing in this Section shall be construed to create a right of action that is not currently provided for in state or federal law or regulation on behalf of an individual student or a class of students for the failure of a particular public school or public school governing authority to comply with any provision of this Section, or to prevent the parent or legal guardian of a student from filing a complaint as provided in applicable state or federal law or regulation.

Acts 1993, No. 292, §1; Acts 2015, No. 250, §1

Resources

Family Support/LA Governmental Resources:

- **Louisiana Hands & Voices:**

www.lahandsandvoices.org

www.facebook.com/LouisianaHandsandVoices

Guide By Your Side

Program Coordinator -- Nicole DeLeon
(504) 388-5712

- **Hands & Voices National Web:**

www.handsandvoices.org

- **Families Helping Families/ LA Parent Training Center:**

www.fhfjefferson.org

- **Louisiana Commission for the Deaf:**

[http://www.dss.state.la.us/departments/lrs/Commission For the Deaf.html](http://www.dss.state.la.us/departments/lrs/Commission_For_the_Deaf.html)

- **Louisiana Athletic Association for the Deaf:**

www.laad.net

Learning About Hearing Loss

- Family-friendly websites where you can learn more about hearing loss and what you can do:
 - www.babyhearing.org
 - www.cdc.gov/ncbddd/hearingloss/index.html
 - www.ncbegin.org
 - www.raisingdeafkids.org
- Louisiana Early Hearing Detection and Intervention (EHDI) Program
 - (504) 568-5028
 - Web: www.ehdi.dhh.la.gov
- Louisiana Hearing, Speech and Vision Program, Office of Public Health, Parent Consultant
 - (504) 473-2479
 - Email: marbelly.barahona@la.gov

- Laurent Clerc National Deaf Education Center
 - (202) 651-5051
 - Email: infotogo@gallaudet.edu
 - Web: [www.gallaudet.edu/Clerc Center/Information and Resources.html](http://www.gallaudet.edu/Clerc%20Center/Information%20and%20Resources.html)
- National Institute on Deafness and Other Communicative Disorders
 - Web: www.nidcd.nih.gov/health/hearing

Finding Other Families Like Yours

In addition to connecting with families through **Hands & Voices**, the following may be helpful:

- Alexander Graham Bell Association for the Deaf and Hard of Hearing (Louisiana Chapter)
 - www.listeningandspokenlanguage.org
 - Email: danacarlisle@yahoo.com
- American Society for Deaf Children
 - (800) 942-2732
 - Email: asdc@deafchildren.org
 - Web: www.deafchildren.org
- Louisiana Hands & Voices
 - (337)515-5774
 - Email: contactus@lahandsandvoices.org
 - Web: www.lahandsandvoices.org
- Families Helping Families of Greater Baton Rouge
 - (225) 216-7474
 - Web: www.fhfgbr.org
- Families Helping Families of Greater New Orleans
 - (504) 888-9111
 - Web: www.flfjefferson.org
- Louisiana Commission for the Deaf
 - 225) 219-2404

Getting Services for Your Child

- Louisiana Early Steps: Early Intervention
 - (225) 342-0095; (866)783-5553
 - Web: www.laeikids.com
- Louisiana School for the Deaf
 - (225) 769-8160; (866) 769-0111
 - Web: www.lalsd.org
- Let Them Hear Foundation Advocacy Program
 - (877) 432-7435

- Web: www.deafspecialeducation.com
- Louisiana Department of Education:
 - <http://www.louisianabelieves.com/>

Learning more about communication options:

- www.raisingdeafkids.org/communicating/choices
- ASL University
 - Web: www.lifeprint.com/asl101
- John Tracy Clinic Correspondence Courses
 - (800) 522-4582
 - Web: www.jtc.org/corres
- National Cued Speech Association
 - (800) 459-3529
 - Email: info@cuedspeech.org
 - Web: www.cuedspeech.org

Helping to Pay for Services

- Louisiana Children's Health Insurance Program (LaCHIP)
 - (877) 252-2447
 - Web: www.lachip.org
- Children's Special Health Services (CSHS)
 - (504) 568-5055
 - Web: www.dhh.louisiana.gov/CSHS
- Starkey Hearing Foundation
 - (800) 328-8602
 - Web: www.starkeyhearingfoundation.org
- Assistive Technology Programs
 - (518) 439-1263
 - Web: www.ataporg.org
- Funding Assistance for Audiology Services
 - Web: www.asha.org/familyfunding
- Children's Hearing Aid Loaner Program
 - Web: www.infantheating.org/HA-loaner

Glossary

Acoustics - Pertaining to sound, the sense of hearing, or the science of sound. Often used to refer to the quality of the sound environment.

Acoustic Feedback - A whistling sound produced by a hearing aid. The amplified signal generated by the receiver of the hearing aid leaks outside, is picked up by the microphone, and is then re-amplified.

Acquired Deafness - A loss of hearing that occurs or develops some time during a person's life but is not present at birth.

Aided Thresholds - The softest level that a given sound can be heard with the hearing aids on and the gain set at a pre-selected level.

Americans with Disabilities Act (ADA) - Signed into law in 1990, this is a "civil rights act" for persons with disabilities. The ADA requires public services and buildings to make reasonable accommodations to allow access to persons with disabilities, including hearing loss.

American Sign Language (ASL) - A manual language with its own word order and grammar, used primarily by people who are deaf.

Auditory Brainstem Response (ABR) - a non-invasive test that provides objective information about the upper auditory system including the inner ear and brainstem. This is a simple and non-invasive test on part of the patient. Electrodes are placed on the ears and head while a click stimulus is presented through soft foam earplugs. This test records the brainwave response to the stimulus. The audiologist will complete analysis and

interpretation of the results and your ENT will discuss the test results with you.

Acquired Hearing Loss - A hearing loss that is not present at birth.

Advocacy - This term refers to the role parents or guardians play in monitoring their child's development. Advocating for your child means a.) that rights are assured you by law (IDEA) and b.) actively participating in the decision-making process to ensure that the services are delivered in line with your goals for your child's development.

Amplification - The use of hearing aids and other electronic devices to increase the loudness of a sound so that it may be more easily received.

Assistive Listening Devices (ALD) - Assistive listening devices are amplification systems designed specifically to help people hear better in a variety of difficult listening situations.

Assistive Technology - Devices and systems (e.g., TTY's, visual alert systems) which improve communication and enhance the listening environment.

Atresia (aural) - An ear malformation in which there is an absence of the external ear canal, usually with abnormalities of the outer ear, and/or middle ear space.

Audiogram - A graph on which a person's ability to hear different pitches (frequencies) at different volumes (intensities) of sound is recorded.

Audiologist - A person who holds a degree and license in audiology and is a specialist in testing hearing.

Auditory Training - The process of teaching a child to use residual hearing for awareness, identification, and interpretation of sound.

Audiometer - A device for presenting precisely measured tones of specific frequencies (or speech and recorded signals) and intensity levels in order to obtain an audiogram.

Auditory Neuropathy/Dysynchrony - A term that describes a pattern of abnormal findings for a number of audiometric measures, e.g., auditory brain stem response (ABR), pure-tone and speech audiometry, and/or acoustic reflexes, yet normal findings for otoacoustic emissions (OAE). The most common pattern is the absence of an ABR with normal OAE.

Auditory Nerve - The cranial nerve (VIII) that carries nerve impulses from the inner ear to the brain.

Balance - The biological system that enables individuals to know where their bodies are in the environment and to maintain a desired position. Normal balance depends on information from the labyrinth or vestibular system in the inner ear and from other senses such as sight and touch.

Behavioral Observation Audiometry (BOA) - A pediatric audiometric procedure in which behavioral responses to sounds (e.g., eye opening, head turning) are detected by an observer. It has been replaced by newer test methods (see Auditory Brainstem Response, Visual Reinforcement Audiometry).

Behind-the-Ear (BTE) Hearing Instrument - A style of hearing instrument that has the electronic components in a case that sits behind the top of the ear. It is then held in place by a custom made earmold

Bilateral Hearing loss - Hearing loss in both ears.

Bilingual/Bicultural (BIBI) - Being fluent in two languages and participating in two cultures. For example hearing (spoken English language) and the Deaf culture (sign language).

Bone Conduction - The transmission of sound (mechanical vibrations) through the bones of the skull to the inner ear. Bone conduction testing is completed using a bone oscillator (vibrator) that is placed on the mastoid bone behind the ear or on the forehead.

Bone-Conduction Hearing Aid - A hearing aid in which the amplified signal directly stimulates the inner ear via a bone vibrator placed on the mastoid bone behind the ear. This type of hearing aid typically is used for individuals with atresia or chronic ear drainage.

Boot - an electronic device that attaches to a hearing aid or cochlear implant to allow the use of an FM system and the wireless transmission of sound

Cerumen - Ear wax.

Chronological Age/Adjusted Age - Chronological age is how old the infant or child is based on his/her date of birth. It is referred to when comparing him or her to other children born at that same time. If a baby was born prematurely, however, his/her development may be measured at his/her adjusted age. Adjusted age takes into account the time between premature birth and the actual due date of a full term pregnancy. Doing this gives a more accurate reflection of what the baby's developmental progress should be.

Cochlea - Also called the "inner ear." A snail-shaped structure that contains the sensory organ of hearing and changes sound vibrations to nerve impulses. The impulses

are carried to the brain along the VIII nerve, or auditory nerve

Cochlear Implant - A medical device that is surgically implanted and bypasses damaged inner ear structures to directly stimulate the auditory nerve, helping individuals who have severe-to-profound hearing loss to interpret sounds and speech.

Cognition - Refers to the ability to think, learn, and remember.

Conductive Hearing Loss - Hearing loss due to failure of sound waves to reach the inner ear through the normal air conduction channels of the outer and middle ear.

Conditioned Play Audiometry (CPA) - A type of hearing test in which the audiologist teaches the child to respond when a sound is heard by playing some type of game. For example, the child puts a peg in a hole or a block in a bucket every time a sound is heard.

Conductive Hearing Loss - A loss of sensitivity to sound, resulting from an abnormality or blockage of the outer ear or the middle ear. The most common cause of conductive hearing loss is middle ear fluid or infection. Other causes include wax buildup in the ear canal, a hole in the eardrum, or damage to the tiny bones of the middle ear.

Configuration - The term used to describe the severity of the hearing loss and the shape of the audiogram.

Congenital Hearing Loss - A hearing loss that is present from birth and which may or may not be hereditary.

Deaf - A hearing loss that is so severe that the child is unable to process linguistic information through hearing alone.

Deaf Community - A group of people who share common interest and a common heritage. Their mode of communication is American Sign Language (ASL). The Deaf Community is comprised of individuals, both

deaf and hearing, who respond with varying intensity to particular community goals which derive from Deaf cultural influences. The Deaf Community in the United States may have a wide range of perspectives on issues, but emphasis remains on deafness as a positive state of being.

Deaf Culture - A view of life manifested by the mores, beliefs, artistic expression, understandings and language (ASL) particular to Deaf people. A capital "D" is often used in the word Deaf when it refers to community or culture aspects or Deafness.

Deaf/Blind - Developmentally significant combined loss of vision and hearing.

Decibel (dB) - The unit of measurement for the loudness of a sound; the higher the number of the dB, the louder the sound.

Degree (of hearing loss) - Refers to the severity of hearing loss. The degree is described by categories of normal, slight, mild, moderate, moderately-sever, severe and profound.

Dynamic Range - The difference between the softest sounds a person can hear and the loudest sounds they can tolerate.

Ear Canal - The passageway from the outer ear to the eardrum.

Ear Infection - Also called Otitis Media; the presence and growth of bacteria or viruses in the ear.

Eardrum - Also called the tympanic membrane; the eardrum separates the outer ear from the middle ear and is important in conducting sound to the middle ear and inner ear.

Earhook - A piece of plastic attached to the behind-the-ear hearing aid that allows for the tubing to be attached to the hearing aid component that sits behind the ear.

Early Intervention- Services to help families with young children, ages birth to three years, with special needs. These services help young children develop and support their families in caring for them.

Earmold - A custom-made piece which fits into the outer ear and connects to a hearing aid.

Educational Audiologist - An audiologist with special training and experience to provide auditory rehabilitation services to children in school settings.

Educational Interpreter - A person who is able to perform conventional interpreting, together with special skills for working in the educational environment.

Eligibility - A child must be determined eligible for early intervention or special education services based on specific disabilities and/or developmental delay (see Part B & Part C). Children with hearing loss are eligible for early intervention services.

ENT - A medical doctor who specializes in the ears, nose, and throat (ENT); sometimes referred to as an otolaryngologist or otologist.

Feedback - The shrill whistling sound made when amplified sound from the hearing aid receiver goes back into the microphone of the hearing aid. Feedback can be caused by an earmold that does not fit properly or a damaged hearing aid.

Fingerspelling - Fingerspelling is a standardized series of hand shapes to form letters of the alphabet.

Flat Hearing Loss - A hearing loss which shows up as a relatively flat (but lowered) line on the audiogram. A flat hearing loss means that the hearing level is diminished approximately the same amount across all frequencies

FM System - An assistive listening device that amplifies the speaker's voice transmitted via radio waves. The device reduces the problem of background noise interference and the problem of distance between the speaker and deaf and hard of hearing (D/HH) listener.

Frequency - The number of vibrations per second of a sound. Frequency, expressed in Hertz (Hz), determines the pitch of the sound.

Gain - The amount of amplification provided. For example, a child with unaided hearing at 70 dB who, when amplified hears at 30 dB, experiences a gain of 40 dB.

Genetic Counseling - Counseling for individuals with birth defect/genetic disorders which may involve hearing loss. Genetic counseling includes recurrence risk information for individuals with hearing loss and their families.

Genetic Testing - May be able to provide information about the cause of hearing loss, possible associated medical conditions, and the risk of hearing loss for other family members through methods, which may include a review of family and medical history, a physical examination, discussion about laboratory tests such as DNA or chromosome testing, and discussion about ongoing care.

Guide By Your Side- Program from Hands & Voices that provides emotional support and unbiased information from trained Parent Guides to families of newly identified children who are deaf or hard of hearing and to the systems that serve them.

Hair Cells - The hair-like structures in the inner ear that transform the mechanical energy of sound waves into nerve impulses.

Hard of Hearing - A hearing loss, whether permanent or fluctuating, which adversely affects an individual's ability to detect and decipher some sounds.

Hearing Age/Aided Age - Age is measured from the time the child begins wearing hearing aids or a cochlear implant consistently.

Hearing aid - An electronic device that conducts and amplifies sound to the ear.

Hearing Aid Evaluation (HAE) - The process of selecting an appropriate hearing aid. The audiologist will evaluate different types of hearing aids to determine which is best suited to a particular hearing loss.

Hearing Disorder - A disruption in the normal hearing process that may occur in the outer, middle, inner ear or the nerves to the brain.

Hearing Impaired - A term sometimes used to describe and degree of hearing loss.

Hearing loss - The following hearing levels are typically characterized as follows:

Normal hearing	0db to 15 db
Mild Loss	16db to 35db
Moderate Loss	36db to 50db
Moderate/Severe Loss	51db to 70db
Severe Loss	71db to 90db
Profound Loss	91db or More

Hearing Screening - Testing of the ability to hear selected frequencies at intensities above normal hearing levels. The purpose is to identify individuals with potential hearing loss, with minimal time expenditure, and to refer them for further testing.

Hearing Threshold Level (HTL) - The softest intensity level (volume) measured in dB hearing level that a person can hear a sound of a particular test pitch. A completely normal HTL is 0 dB. Also known as HL.

Hereditary Hearing Impairment - Hearing loss passed down through generations of a family.

Hertz (Hz) - Cycles per second. Frequency is denoted in Hz.

Huggies - The brand name of a plastic-ringed device designed to "hug" the hearing aid to the ear. Popular for infants and toddlers whose ears may be too small to hold the hearing aid snugly in place.

IDEA - The Individuals with Disabilities Education Act, Public Law 105-17; formerly known as PL 94-142 and PL 99-457.

Impressions - A blueprint taken of the ear by putting soft material in the ear canal and allowing it to harden before removing it. This 'impression' of the ear is sent to the manufacturer for custom hearing aid products.

Inclusion - Often used synonymously with the term "mainstreaming," this term refers to the concept that students with disabilities should be integrated and included to the maximum extent possible with their (typically developing) peers in the educational setting.

Individualized Education Plan (IEP) - The IEP is a written program developed by an educational team with the parents to meet the educational needs of the child (ages 3-21).

Individualized Family Service Plan (IFSP) - Is a written plan developed by parents or guardians with input from a multidisciplinary team to meet the individualized needs of the child (birth through 2) with developmental delays/disabilities and the child's family.

Infant-Toddler Services - A statewide community-based program which identifies infants and toddlers who have a developmental delay or disability, or who have conditions which lead to a developmental delay or disability, and which provides early intervention services to meet the individualized needs of those children and their families.

Inner Ear - The part of the ear that contains both the organ of hearing (the cochlea) and the organ of balance (the labyrinth).

Intensity - The loudness of a sound, measured in decibels (dB).

Interpreter - A person who facilitates communication between persons who are hearing and those who are deaf or hard of hearing.

Least Restrictive Environment - A basic principle of Public Law 105-17 (IDEA), which requires public agencies to establish procedures to ensure that to the maximum extent appropriate, children with disabilities are educated with children who are not disabled. All services and educational placements must be individually determined (pertains to children ages 3 to 21) in light of each child's unique abilities and needs.

Lip-Reading - Also known as speech-reading; a communication strategy that understands spoken language by interpreting lip movements, facial expressions, and postures.

Localization - The ability to determine the direction of a sound source.

Mainstreaming - The concept that students with disabilities should be integrated with their non-disabled peers to the maximum extent possible, when appropriate to the needs of the child with a disability. Mainstreaming is one point on a continuum of educational options. The term is sometimes used synonymously with "inclusion."

Microphone - The part of the hearing aid that picks up a sound and converts it from an acoustic signal into an electrical signal.

Middle Ear - The part of the ear that includes the eardrum and three tiny bones (ossicles) of the middle ear, ending at the round window that leads to the inner ear.

Mixed Hearing Loss - A hearing loss with both conductive (middle ear pathology) and sensory (cochlear or VIIth nerve pathology) components. The audiogram shows a bone-conduction hearing deficit plus a gap between earphone and bone-conduction responses.

Multi-Disciplinary Evaluation - The child's development is evaluated by two or more qualified professionals to determine if there are any delays or conditions that would indicate the need for early intervention or special education services

Native Language - The language of the home, i.e. the native language of children who are deaf with deaf parents is often American Sign Language.

Natural Environment - Defined by the Individuals with Disabilities Act (IDEA) as : "Settings that are natural or normal for the child's age peers who have no disabilities. To the maximum extent appropriate to the needs of the child, early intervention services must be provided in natural environments, including the home and community settings in which children without disabilities participate."

Oral - A term that is used when referring to individuals with hearing loss who talk but do not necessarily use sign language. Emphasis is placed on use of spoken language.

Ossicles - The chain of three tiny bones in the middle ear (malleus, incus, stapes). Sometimes these bones are called the hammer, anvil and stirrup in common terms.

Otitis Media - Fluid that is present in the middle ear, with or without infection, may cause temporary hearing loss. Children with recurring episodes may experience fluctuating hearing loss and may be at risk for speech-language delays.

Otoacoustic Emissions (OAE) - A passive audiological test that verifies cochlear activity, often is used in testing infants

suspected of hearing loss. A probe is placed in the ear canal for this measurement of sensorineural deafness.

Otolaryngologist - Also known as an ENT; a physician/surgeon who specializes in diseases of the ear, nose, throat, head and neck.

Otologist - A physician who specializes in medical problems of the ear.

Otology- The branch of medicine that specializes on the ear.

Outer Ear- The external portion of the ear that collects sound waves and directs them into the ear. The outer ear consists of the pinna and the ear canal.

Output - Refers to how much amplification is being put out by a hearing aid.

Parent-Infant Program - A program of family-centered education and infant intervention which stresses early exposure to language and attention to developmental processes which enhance the learning language.

Part B - The section of Public Law 105-17 (IDEA) that refers to special education services available to eligible children aged three through twenty-one years of age and their families.

Part C - The section of Public Law 105-17 (IDEA) that refers to early intervention services available to eligible children from birth through two years of age and their families.

Pinna - The outer part of the ear; also called the auricle

Play Audiometry - The audiologist tests hearing using play and a conditioned response. For example, when the child is

presented with a sound, he or she is to drop a block into a container, indicating that the sound was heard. Sometimes referred to as conditioned play audiometry (CPA).

Postlingual Hearing loss - Hearing loss which occurs following the acquisition of speech and language.

Prelingual Hearing loss - Hearing loss which is present at birth or occurred prior to the development of speech and language.

Pressure-Equalizing (PE) Tube - Also called a tympanostomy tube; a tube that is inserted in the eardrum to equalize the pressure between the middle ear and the ear canal and to permit drainage.

Progressive Hearing Loss - A hearing loss that becomes increasingly worse over time.

Pure Tone Audiometry - The main test used by audiologists to evaluate hearing loss. This test uses frequency specific pure tones for responses so that the configuration ('shape') of a hearing loss can be identified.

Real-Ear-to-Coupler Difference (RECD) - The difference, in decibels and across frequencies, between the response of a hearing aid measured in a real ear versus a standard coupler. The RECD is a measure that allows the audiologist to accurately specify the sound levels delivered to the ears of infants and young children

Real-Ear Measurement - An audiological test that measures the actual output of the hearing aid in the ear canal. It assesses how effectively sound is actually being amplified by the hearing aids in the ear.

Residual hearing - Auditory abilities of an individual with a hearing loss(i.e., the amount of usable hearing).

Reverberation- The reflection of a sound off a hard surface causing it to persist after the sound source has been stopped.

Sensorineural - A type of hearing impairment caused by damage that occurs to the inner ear (cochlea) and or nerve of hearing. Sensorineural damage is usually irreversible.

Sign Language - A method of communication used primarily by people who are deaf or hard of hearing in which hand movements, gestures, and facial expressions convey grammatical structure and meaning.

Sloping Hearing Loss-Refers to a hearing loss that gets progressively worse as the pitch is raised from low to high. On the audiogram the line appears to “slope” or drop off as the line moves from the left to the right.

Speech Audiometry- Used to determine the weakest intensity at which a person can recognize words, or to measure the clarity of words when they are heard at a comfortable loudness.

Speech Awareness Threshold (SAT) - This is the faintest level at which an individual detects speech 50% of the time.

Speech Banana - The area on an audiogram where most conversational sounds of spoken language occur. It is called the “speech banana” because of its’ shape on the audiogram.

Speech Detection Threshold - The softest level a person can perceive the presence of a speech signal.

Speech Frequencies - The frequencies within the 500 to 4000 Hz region, which are most important for hearing and understanding of speech.

Speech-Language Pathologist - A professional who works with individuals who

have specific needs in the areas of speech and language.

Speech Reception Threshold (SRT) - This is the faintest level at which an individual identifies 50% of the simple spoken words presented.

Speech Reading - (lip-reading) The interpretation of lip and mouth movements, facial expressions, gestures, prosodic and melodic aspects of speech, structural characteristics of language, and topical and contextual clues.

Syntax - The way in which words are put together to form sentences, clauses, and phrases.

Threshold - See also Hearing Threshold Level; the softest level at which a sound can be heard 50 percent of the time. The term is used for both speech and pure tone testing.

Tympanogram - A “pressure” or “impedance” test that tells how the ear canal, eardrum, Eustachian tube, and middle ear bones are working. It is not a hearing test.

Tympanometry - A test used to measure the condition of the middle ear and the movement of the eardrum.

Unilateral Hearing loss - A mild to profound hearing loss in one ear.

Vestibular System - The system in the body that is responsible for maintaining balance, posture, and the body’s orientation in space. This system also regulates body movement and keeps objects in visual focus as the body moves.

Visual Reinforcement Audiometry (VRA) - A method of assessment in which the child is conditioned to look at a toy that lights each time he or she hears a sound; used with young children.

10/2018

Notes:
