

Infant Hearing

Resource Guide

**For Families With Infants and Toddlers
Who Are Deaf/Hard of Hearing**



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Arkansas Department of Health Infant Hearing Program Resource Guide

This resource guide was written and compiled with the help of many individuals and agencies interested in hearing and hearing loss in children. This guide was developed after examination of materials from Early Hearing Detection and Intervention Programs (EHDI) across the United States, particularly Kansas, Colorado and Indiana. The resource information is intended for dissemination to parents of deaf and hard-of-hearing children. We have tried to find the latest resource information; however, our list of resources may not be comprehensive nor are we responsible for address, website and other information changes that occur over time.

Infant Hearing Program
Arkansas Department of Health
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Thoughts Shared by Parents:

“When we were told by the audiologist that our child was deaf, she cried along with us. This let us know how much professionals do really care.”

“It is a good thing when audiologist and early childhood specialists realize that we, the child’s parents, know our child the way that they never will.”



“Parents need to share important details with their child’s doctor and other professionals who work with their child. Parents also need to listen and learn themselves.”

“After I found out that my daughter was deaf, I knew I had to become an advocate for her and I did not like that. It was not in my nature to speak up and speak out. Now I know that being an advocate was the best thing I could have ever done. I was able to teach her to be an advocate for herself, as she got older.”



“Hard of hearing children face so many challenges in education as well as socially. It’s important to raise them as much like a hearing child as you can in order for them to be successful in life.”

PReface

“As a parent of adult children diagnosed with disabilities, my heart goes out to you. While the initial news is heartbreaking, it is not the end of the world. Be assured that there is more light at the end of the tunnel than you can at first imagine. I encourage you to quickly dedicate yourself to acquiring knowledge about your child’s diagnosis, learning about available resources to manage the challenge, and aggressively implementing a plan of action. But, most important is the love and constant encouragement that you give to your child helping them to envision a bright, productive future for themselves. Their personal dreams are their key to success. I have long believed---it is your attitude and not your aptitude that will ultimately determine your altitude in life.”

Senator Brenda Gullett, Pine Bluff

PREFACE

Over 12,000 children are born every year in the United States with some level of hearing loss. Studies have shown that the earlier a child is identified with a hearing loss and begins early intervention, the more likely they are to develop language and communication skills on par with their peers, and lead full and productive lives.

Arkansas enacted legislation, effective 1999 to provide screening for the early detection of hearing loss in newborn infants. Newborn hearing screening makes a difference for all children and their families: information about hearing and typical hearing milestones is valuable for all parents in the care of their child. One of our nation's goals is to confirm hearing loss by three months of age, with appropriate intervention by six months of age. Early detection of hearing loss in an infant, early medical management as needed, and the initiation of early intervention and treatment before six months of age has been shown to be highly effective in promoting a child's development. Early intervention services, as desired by the family, should begin as soon as possible.

This Resource Guide is based on the following beliefs:

A child with a hearing loss and his or her family should have access to:

- Assessment, diagnosis, and intervention as early as possible.
- Family-centered programs that provide early language acquisition.
- Information about where to receive health and medical services.
- Natural language development through the visual and/or auditory channels as early as possible.
- A linguistically rich environment.
- Qualified personnel who are proficient in the family's preferred mode of communication and primary language.
- Children and adult role models who share the family's communication mode and primary language.
- An early intervention program that embraces high expectations, standards and evaluation criteria.
- An early intervention program planned and delivered by qualified personnel in collaboration with the family.
- The most current resources and assistive technology.

INTRODUCTION

“Parents need to be careful not to make a decision based on what is best or easiest for them. For an example, some parents choose the oral method and think that their child is successful because they can speak a few words. When really the child is not being successful and feels isolated. Being able to speak is not everything. There are some children who are successful with the oral method and some who will not be. Your child holds the answer to this choice.”

INTRODUCTION

This Resource Guide has been designed for you to read at your own pace. You may find yourself reading some sections now and some later. It may be helpful to read certain sections more than once.

You can use this Resource Guide to find out about:

- Dealing with feelings
- Community support systems, resources, and programs
- Hearing, hearing testing, hearing loss, and amplification
- Choices for communication
- Resources for financial assistance

As you look over this guide, you may think of questions and ideas you haven't considered. There is no one "right" way when it comes to finding the program that will help your child to succeed. You will make many decisions in the days ahead. Give yourself the time you need. Your child's needs, as well as the needs of your family, will change with time. Remain open to new ideas.



Feelings and emotions

"I have several thoughts to share:

- * "Deaf children are, first and foremost, children. So treat them as you would any child and hold them to the same expectations you have for your other children."*
- * "Learn to enjoy the special journey your are on, find the humor and the beauty and joy. It will enrich your life."*
- * "Don't be afraid to go out on a limb---that is where the fruit is."*

Mother with two daughters attending the Arkansas School for the Deaf.

FEELINGS AND EMOTIONS

“Hearing is the only thing your child can’t do today that you thought he could do yesterday.”

Most people do not know much about hearing loss and what it means for a child and his/her family. You may not have heard much of what was said after you were told the initial diagnosis---“your child has a hearing loss.” Instead, many questions may have raced through your mind:

“Can this hearing loss be corrected?”

“What caused this hearing loss?”

“Will it get better?”

“Will it get worse?”

“Can my child learn to talk?”

“Can she go to a regular school?”

“If we have more children, will they have a hearing loss?”

“Can he/she get married?”

“Will he/she be able to get a job?”

The answers to some of these questions may not be what you want to hear. No one knows for sure what your child’s future holds. You want the best for your child, but now you may not know what to do or where to turn.

“There is not a day that goes by that I am not reminded that my child has a hearing loss – but there is also not a day that goes by that I am not thankful for all the joy she gives me by little things she does that so many other parents get to take for granted.”

In the days and weeks following the confirmation of your child’s hearing loss, you may feel as if you are on a roller coaster. Your feelings may swing from despair to hope, from sadness to anger, from feeling incompetent to feeling confident. As you carry out your daily routines—finishing a chore or arriving at a destination –you may realize that your mind was somewhere else, thinking about your child and what you should do. You may also find unexpected sources of strength within yourself to do what has to be done in spite of your feelings. Working through your feelings takes time.

Family members may also experience these same feelings of confusion and helplessness. Each person reacts differently to the news that your child has a hearing loss. For some there is a feeling of loss; for others, denial. Keep in mind that most families need time to adapt to the changes that the diagnosis of hearing loss will present and that each will react in a different way. Recognizing and sharing feelings is usually the best way to deal with them, and support is available from many sources, including family, friends, and professionals.

“My family went from knowing nothing about sick babies, being in the hospital for extended periods of time, and deafness, to the point where we now know and understand what is happening to our child.”

The professionals who evaluate your child’s hearing will have recommendations for you: see an ear specialist; meet with early intervention professionals; have more testing done. As you follow these recommendations, you will meet people who help answer your questions and explain the decisions you must make. The information they give you and opinions they express may result in more confusion for you. Continue to pursue answers to your questions.



Though your child has a hearing loss, it is important to talk, sing, read, and play with your child. Along with being fun, this early interaction provides a solid foundation for learning to communicate. The rest will all come in time – along with joys and surprises you might not imagine today.

Who will help us?

“My husband and I want the professionals to know that there is so much more to our child than just his hearing loss. He is not just the audiogram, or test score. He is our child and he just happens to have a hearing loss.”

WHO WILL HELP US?

You will meet many new people because of your child's hearing loss. These people may include audiologists, early intervention specialists, medical professionals, and parents and/or caregivers of children with a hearing loss. Following is a brief description of the ways each may help you.

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 audiologic 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 professions has special expertise to help your infant and you. 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 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 records of 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 (*i.e.*, 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.

Parents of Children Who Are Deaf or Hard of Hearing

Parents (hearing/deaf) may help by:

- Sharing what they have experienced and 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.
- Sharing their initial feelings about being a parent of a child with hearing loss and how these feelings changed with time.
- Telling you about their child's activities and achievements.
- Getting your children together for playtimes and social interaction.

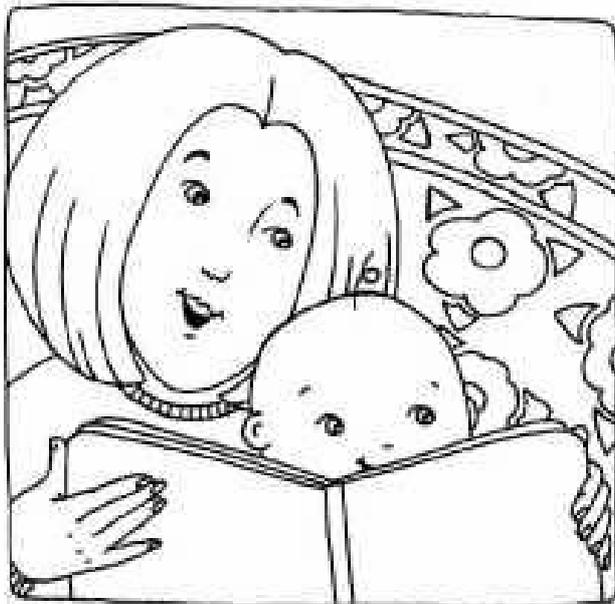
Adults Who Are Deaf or Hard of Hearing

- Sharing life experiences.
- Serving as a role model.
- Serving as a language model.

You Can Help Your Child

Parents and family members may help by:

- Learning as much as you can about hearing loss and communication.
- Keeping all your appointments.
- Committing to follow through with any recommendations you have accepted from the professionals working with you and your child.



“For parents of all children, especially those who are deaf or with special needs: Educate yourself. Look for other parents who share similar situations with you. Be patient and remember that you have the best interest of your child in mind.”

HEARING AND HEARING LOSS

Parts of the Ear

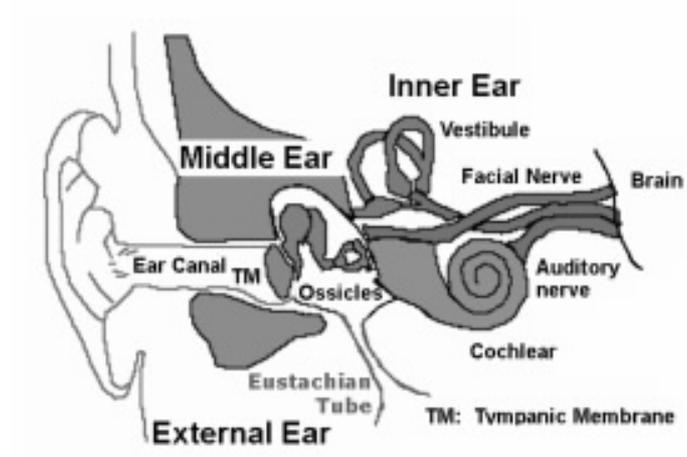
The ear is divided into three main sections: the outer ear, the middle ear, and the inner ear. Sound passes through all three sections of the ear before it goes to the brain. The brain interprets the sound and tells us what we are hearing. It tells us if we are hearing music, a voice, a car horn, a dog, or other sounds.

Sound goes into the **outer ear**. The part of the outer ear that we can see is called the **pinna**. It catches sound which travels from the pinna through the **ear canal**. The sound pushes against the eardrum (tympanic membrane), which separates the outer ear and the middle ear. Sound hits the eardrum and makes it vibrate back and forth.

The **middle ear** contains three of the smallest bones in the body. They are so small they can fit on a dime. Together these bones are called the **ossicles**. Individually they are called the malleus, the incus and the stapes. They are often referred to as the hammer, anvil and stirrup because of their shapes. When the eardrum moves, it makes the three bones move.

The **inner ear** is located in the skull on the side of your head. This part of the ear contains the **cochlea** and the **hearing nerve**. The cochlea is shaped like a snail and contains thousands of tiny nerve endings called **hair cells**. These hair cells are tuned somewhat like the keys on a piano. Some of the hair cells respond to low pitch sounds, and some respond to high pitch sounds. These hair cells lead to the hearing nerve which connects the cochlea to the brain.

The three sections of the ear work together to help us hear. As sound hits the eardrum, it causes the eardrum to vibrate. The vibrations make the hammer, anvil and stirrup move which causes the nerve endings in the cochlea to move. The nerve endings send a message to the hearing nerve which carries the message to the brain. The brain tells us what we are hearing.



Audiologic Assessment of Infants and Toddlers

In 1999 a law was passed in Arkansas which required all birthing hospitals with greater than 50 births per year to screen the hearing of newborns before discharge. This law went into effect September 2000.

When an infant does not pass the hearing screening in the hospital, additional testing is needed to determine 1) if the infant has a hearing loss; 2) whether the hearing loss is medically treatable; 3) the degree (amount) of hearing loss; and 4) the configuration (shape) of the hearing loss.

There are many kinds of hearing tests, and each one serves a different purpose. Each test gives the audiologist specific information. In most cases, many tests will be completed over a period of time.

The following is an introduction to some of the most commonly used hearing tests:

OTOACOUSTIC EMISSIONS (OAE)

OAE's are measured by presenting a series of very brief clicks to the ear through a probe inserted in the outer ear canal. This test measures the response of the sensory cells in the cochlea to sound. The presence of OAE's suggest normal cochlear function or sensitivity for those frequencies within the range of testing. This non-invasive test takes only a few minutes. OAE's typically do not occur in hearing loss of 30-35 dB HL or greater. Middle ear fluid or debris in the ear canal may negatively affect test results. OAE testing is for all ages.

AUDITORY BRAINSTEM RESPONSE (ABR OR BAER)

This test measures the response of the auditory system to sound. A soft (low level) click is presented to the ear through an earphone or via bone conduction. Surface electrodes, placed on the infant's head, record the response as the signal travels from the ear through the auditory nervous system to the brain. Brainstem responses are measured in the form of waves on a graph. For testing purposes, the infant must be quiet, sleeping, or perhaps sedated.

ABR testing is for all ages.

TYMPANOMETRY

Tympanometry is not a test-of-hearing, but of middle ear function. A small probe is placed in the infant's ear canal. Using varying air pressure, the movement of the tympanic membrane (eardrum) is measured. Results of this test indicate the status of the middle ear. Abnormal results suggest that the infant may have a medically treatable condition (*e.g.*, a hole in the tympanic membrane, fluid in the middle ear (*e.g.*, otitis media), or abnormal movement of the small bones (ossicular chain of the middle ear) and should have a medical referral.

Tympanometry testing is for all ages. However, cautious interpretation is required when used with infants younger than four months of age.

ACOUSTIC REFLEX

This test uses the same probe as is used in tympanometry. A loud sound is presented and contraction of the muscles in the middle ear (a reflex) is measured. The reflex occurs when hearing is normal. The reflex does not occur when there is middle ear disease or a significant sensorineural hearing loss is present.

Acoustic reflex testing is for all ages. However, cautious interpretation is required when used with infants younger than four months of age.

AIR CONDUCTION TESTING

This test measures hearing sensitivity to sounds (*e.g.*, speech, or pure tones) presented from speakers or earphones through the outer, middle, and inner ear to the brain. Visual reinforcement audiometry or conditioned play audiometry are techniques used by the audiologist to determine that the child has heard the sound. In pure tone air conduction testing a range of frequencies is presented at different loudness levels in order to determine the child's hearing thresholds. Additional testing must occur to determine whether a hearing loss is sensorineural, conductive or mixed.

Air conduction testing is for all ages where reliable responses can be obtained.

BONE CONDUCTION TESTING

This test measures hearing sensitivity to sounds (*e.g.*, speech or pure tones) presented through a bone oscillator (small vibrator) placed on the bone behind the ear. Sound vibrations travel through the skull to the inner ear and brain. Visual reinforcement audiometry or conditioned play audiometry are techniques used by the audiologist to determine that the child has heard the sound. In pure tone bone conduction testing, a range of frequencies is presented at different loudness levels in order to determine the child's hearing thresholds. This test determines the sensorineural component of the hearing loss

Bone conduction testing is for all ages where reliable response can be obtained.

SPEECH AWARENESS THRESHOLD (SAT)

This test measures awareness to speech presented through speakers, insert earphones, earphones or a bone oscillator. The purpose of this test is to obtain speech threshold (*i.e.*, the softest level at which the child is aware of speech). The audiologist compares these results with those of the air conduction and bone conduction tests. Some very young children will respond to speech before they will respond to pure tones.

Speech awareness testing is for all ages where reliable responses can be obtained.

SPEECH RECEPTION THRESHOLD (SRT)

This test presents speech through speakers, insert earphones, earphones or a bone oscillator in order to determine a threshold to *recognized* words. The child must know the names of some common objects in order to participate in this test. The audiologist presents words (*e.g.*, bathtub or cowboy), and is looking for the softest level at which the child repeats the word or points to a picture or toy correctly.

Speech reception testing is for all ages where reliable responses can be obtained.

How Infants And Toddlers Respond To Sound During Hearing Tests

The purpose of audiometry is to determine the softest level (threshold) at which the infant/toddler responds to a range of frequencies (pitches). Just as an adult is asked to raise a hand or push a button when a sound is heard, an infant/toddler can be “conditioned” to make a behavioral response to a stimulus.

Five Months to Two Years of *Developmental Age*

Visual Reinforcement Audiometry (VRA)

The infant must be able to sit with minimal support and turn his/her head. The goal of VRA is for the infant to look at a toy spontaneously after hearing a sound.

- Your baby will be seated on your lap in a special testing area called a sound treated booth. In some cases an audiology assistant will sit facing you in the booth to maintain the baby’s attention and observe his/her responses.
- The audiologist in the testing area will present sounds (speech or pure tones) through the speakers in the booth, through insert earphones or through earphones placed on your baby.
- When your baby shows a change in behavior (*e.g.*, looking around or stopping movement) after the sound is presented, the audiologist reinforces this change in behavior by activating or moving a specially lit toy. The assistant may initially show your baby the toy.
- After the assistant regains your baby’s attention, the audiologist will present another sound.
- When your baby learns to respond reliably to the sounds by looking at the toy, the audiologist will begin the hearing test.

Two Years and Older

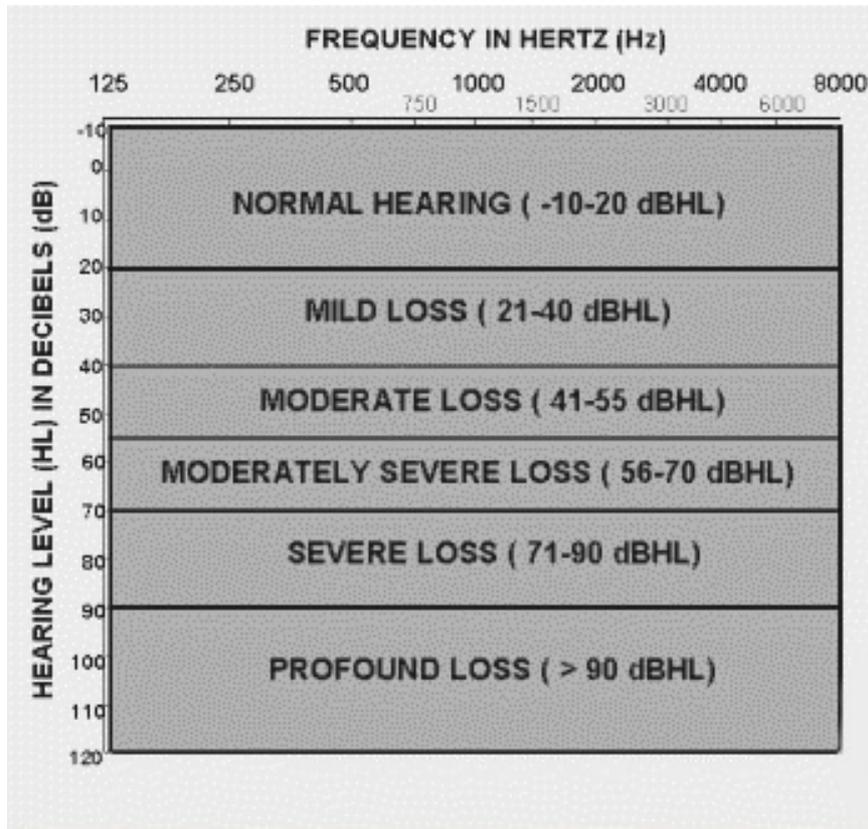
Conditioned Play Audiometry (CPA)

The child must be able to manipulate objects such as blocks or stacking rings.

The goal of CPA is for the child to “play the game” (*e.g.*, place the block in a container or stack a ring on the spindle) immediately after hearing the sound (a conditioned response).

- Your child may be on your lap or in a chair in a sound treated booth.
- The audiologist in the testing area will present sounds (speech or pure tones) through speakers, insert earphones or through earphones placed on your child.
- After the sound is presented, your child is taught to place the block in a container. The audiologist reinforces this behavior by praising the child.
- When your child learns to respond reliably to the sounds by manipulating the toy, the audiologist will do the hearing test.

PURE TONE AUDIOGRAM



In addition to the degree of loss, the **frequency** or pitch is also plotted on the audiogram. Frequencies are measured in **Hertz (Hz)**. For example, the sounds made by a bullfrog are “low” frequency sounds between 125 and 250 Hz. The sounds made by a cricket are “high” frequency sounds between 4000 and 8000 Hz. The frequency of the sound is across the top of the audiogram

What Does an Audiogram Tell Me?

An audiogram tells several things:

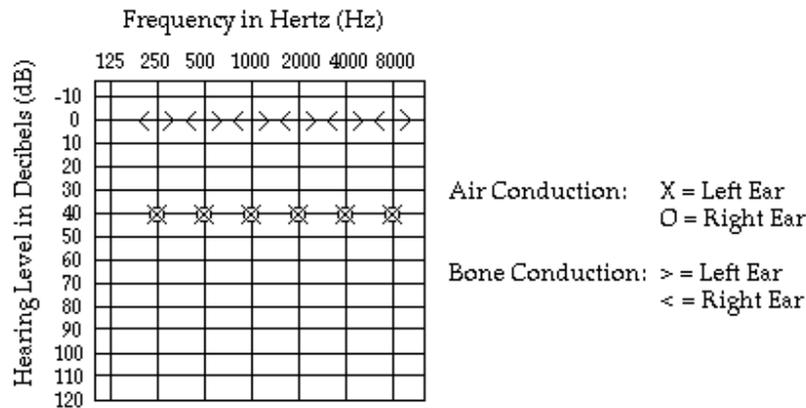
1. Do both ears have the same **thresholds** or do the **thresholds** differ?
2. What is the degree (amount) of hearing loss?
3. Is there more hearing loss for some frequencies than others?
4. Is there a difference between the air conduction and bone conduction thresholds (an air-bone gap)?

TYPES OF HEARING LOSS

Conductive Loss

A conductive loss refers to a decrease in sound caused by a problem in the outer or middle ear. Such a loss indicates normal inner ear activity. Possible causes of a conductive loss may be: wax in the ear canal, a perforation in the eardrum, or fluid in the middle ear. This type of loss is usually treatable with either medical or surgical intervention.

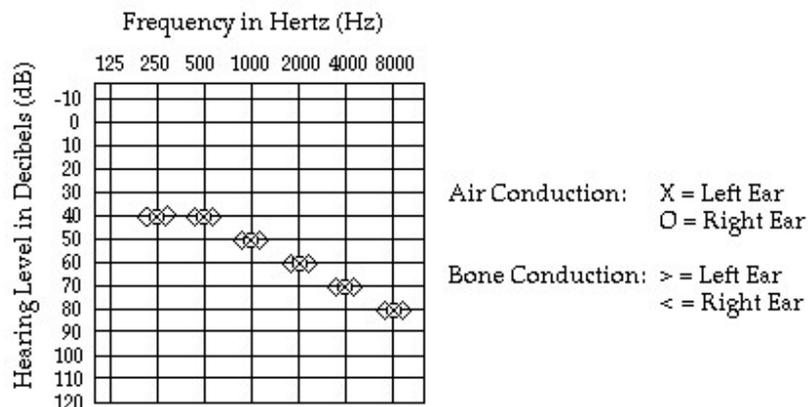
Example of a conductive loss audiogram:



Sensorineural Loss

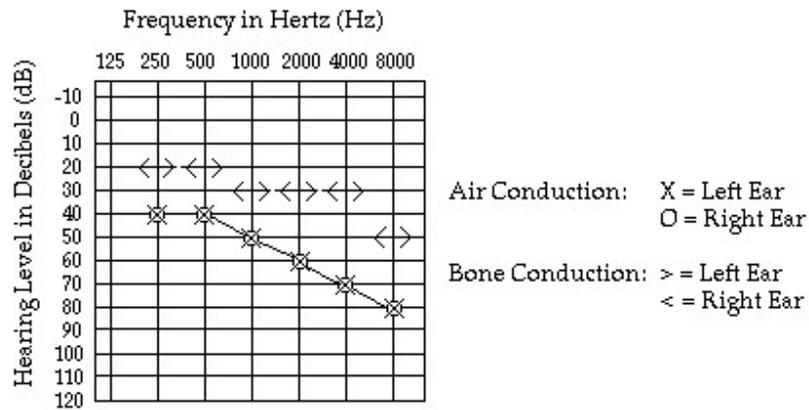
Sensorineural hearing loss (sometimes referred to as nerve deafness) can occur if inner ear structures do not work correctly. Examples of sensorineural hearing loss are hair cell damage or malformation of the cochlea. Sensorineural losses are generally perceived as a loss of clarity of sound and are more likely to be permanent.

Example of a sensorineural loss audiogram:



Mixed Loss:

A mixed loss refers to a conductive loss and a sensorineural loss occurring at the same time. While the conductive component may be treated, the sensorineural component is permanent.



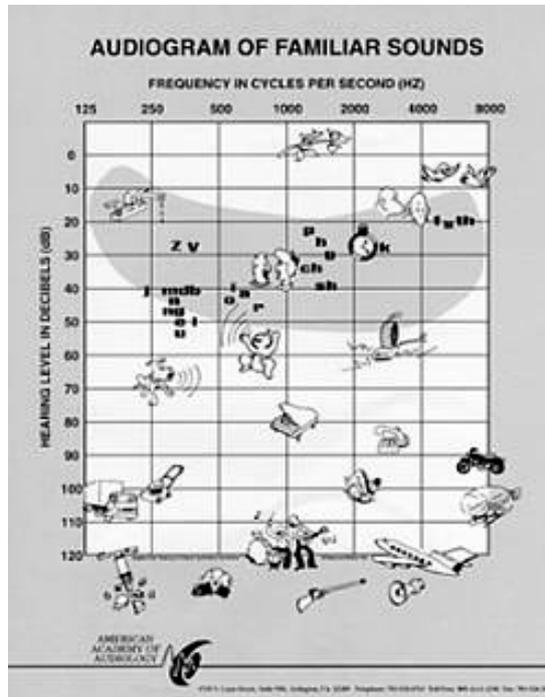
The types of hearing loss described and illustrated above may present themselves in a variety of ways. If only one ear is affected, it is referred to as an unilateral hearing loss. When both ears are affected, it is known as a bilateral hearing loss. It is possible that the child’s hearing loss may never change. Some children, however, may have a progressive hearing loss, where, over time, the hearing becomes progressively worse.

Speech Banana:

When the pitch and loudness of the many conversational speech sounds are displayed on an audiogram, they appear in the shape of a banana. The term “speech banana” is used to refer to the location of conversational speech sounds on an audiogram.

Low Frequency

High Frequency



Effects of Degree of Hearing Loss Without Amplification

DEGREE OF HEARING LOSS

WITHOUT AMPLIFICATION

(Average at 500,1000 & 2000 Hz)

Normal Hearing

0 – 20 dB HL (hearing level)

Mild Hearing Loss

21-40 dB HL

The child will have trouble hearing soft sounds that are at a distance, short words, and speech that is present in “noise” (other sounds in the environment) A slight or mild hearing loss may cause language delay (*e.g.*, limited vocabulary), and as speech develops, some speech errors may occur

Moderate Hearing Loss

41-55 dB HL

The child can hear only loud sounds including speech unless the sound is close in proximity. A moderate hearing loss can result in significant language delay (*e.g.*, problems understanding language, limited vocabulary development, problems using language), speech (articulation) errors, and differences in voice quality. The child can miss up to 50-75% of the speech signal depending on the degree of hearing loss.

Moderately-Severe Hearing Loss

56-70 dB HL

The child can hear only very loud sounds (including speech) that are close. A moderately-severe hearing loss results in significant language delay, speech (articulation) errors, and possibly atonal voice quality. The child can miss up to 100% of the speech signal, and will have difficulty with aspects of language such as idioms and multiple word meanings.

Severe Hearing Loss

71-90 dB HL

The child can hear only very loud sounds that are close to the ear, and understanding of sound (speech; environmental) is limited without visual and contextual clues. A severe hearing loss results in significant language delay, considerably reduced speech intelligibility, and atonal voice quality is likely.

Profound Hearing Loss

90 dB HL or greater

The child may hear very loud sounds that are close to the ear, but probably responds more to vibration. The child relies on visual cues as the primary sensory means of communication. Spoken language is significantly delayed, and disorders of articulation, intonation patterns, and speech rhythm will be present.

WHAT IS A HEARING AID?

A hearing aid is a device for the ear, which makes sounds louder in the range of a particular hearing loss. The goal is to provide the ability to hear speech and environmental sounds at a comfortable level.

A hearing aid CAN:

- Make *all* sounds in the environment louder (*e.g.*, speech, TV, air conditioner, vacuum).
- Improve speech and language development for infants and toddlers.
- Improve communication and interaction with family and peers.

A hearing aid CANNOT:

- Cure the child's hearing loss.
- Help the child hear sound at frequencies at which there is no hearing.
- Make only speech sounds louder.
- Make sounds clearer if the child's cochlea is distorting the incoming sounds.

STYLES OF HEARING AIDS AVAILABLE

(Not all styles are appropriate for small children.)

Hearing aid styles differ by how they are worn on the ear.

BEHIND THE EAR (BTE): Hearing aids are positioned behind the ear and coupled to the ear with a custom fitted earmold. BTE hearing aids are usually preferred for infants and young children due to the following features:

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

IN-THE-EAR (ITE): Hearing aids are hard shelled and custom molded to fit in the bowl of the ear.

IN-THE-CANAL (ITC): Hearing aids are hard shelled and custom molded to fit in the canal portion of the ear. They extend slightly out of the opening of the ear canal.

COMPLETELY-IN-THE-CANAL (CIC): Hearing aids are hard shelled and custom molded to fit deeply into the ear canal with only a removal handle showing.

HOW DOES A HEARING AID WORK? Sounds are picked up by a microphone and carried to a signal processor (amplifier) where they are made louder and shaped to match the hearing loss characteristics such as frequency (pitch) and intensity (loudness). The sound is then sent through the receiver and delivered by the earmold into the ear.

Earmold: Custom made, seals the ear to prevent sound leakage which then causes feedback (whistling).

Tubing: Soft, flexible; connects the earmold to the hearing aid; securely attaches to the earmold and detaches from the earhook; replaceable if torn, cracked or too small.

Earhook: Curved, hard plastic; supports the hearing aid on top of the ear: protects the receiver and channels sound to the earmold. May have a filter to further shape the sound for the hearing loss.

Receiver: Sound speaker inside the hearing aid that opens into the earhook.

Microphone: Collects sound for amplification through a small opening in the hearing aid case..

Telecoil: An external control on a hearing aid, which activates a series of interconnected wire loops that pick up magnetic energy from a telephone or a magnetic loop of an Assistive Listening Device (ALD). It is often beneficial for children to have hearing aids equipped with a telecoil.

Internal Adjustment Controls or Computer Cable Connector Port: Accessed by the audiologist to modify the hearing aid sound response.

Switch: Usually O = Off; T = Telephone or FM System; M = Microphone

Volume Control: Usually a numbered wheel that changes the loudness of the sound. Typically, the smaller the number, the lower the volume. Some hearing aids may not need this control.

Battery Door: Holds the battery which is changed regularly; opening the door will turn off the hearing aid; batteries are toxic if swallowed. Tamper resistant doors are recommended for children.

WHEN SHOULD MY CHILD GET A HEARING AID? Most newborns have their hearing tested at birth and can be fitted with hearing aids within a few weeks. Research tells us that fitting a hearing aid as soon as possible helps to minimize the effect hearing loss has on language development. Ideally, an infant will be fit before 3 months of age and no later than 6 months of age.

WHO DECIDES WHICH HEARING AID IS BEST? Parents and the child's audiologist should come to a careful decision regarding amplification after consideration of the infant or child's individual needs, including the characteristics of the hearing loss, available technology as well as financial resources. Hearing aids are prescribed to assure the best possible fit with the information available. As more specific information about the hearing loss is obtained, the hearing aids will be adjusted. The audiologist will perform tests with the hearing aids on your child to further confirm the fitting benefit.

IMPORTANT FEATURES OF HEARING AIDS FOR INFANTS & TODDLERS

The hearing aid should:

- Provide sufficient amplification to allow the child to hear speech sounds. (When the child has such a profound hearing loss that even the most powerful aid does not allow speech to be heard, parents may want to explore other options.)
- Have “Direct Audio Input” (DAI) and microphone-telecoil (M-T) switching options. These options allow the hearing aid to be coupled with other assistive devices.
- Have flexibility in making changes in tone, gain, and output limiting so adjustments can be made as more information is obtained about the child’s hearing thresholds and responsiveness to sound.
- Have tamper-resistant battery compartment and controls. *Hearing aid batteries are toxic. They should be monitored closely; they can be harmful if swallowed.*
- Have a microphone that is most appropriate for the listening needs of the child. Directional microphones pick up sounds coming from the front. Omni-directional microphones pick up signals from all directions and may be more beneficial to a child who is mobile. Multiple microphones allow for switching between the omni and directional microphone setting.
- Have comfortable customized earmolds. Earmolds may need to be replaced every three to six months for a very young child because of the fast growth rate. The earmolds may last up to a year for older children.

Talk to your child’s audiologist regarding other accessories such as battery testers, hearing aid stethoscopes, safety clips, and dehumidifiers.

TYPES OF HEARING AID CIRCUITRY

Conventional or Standard Hearing Aids:

Increases the loudness of the incoming sound electrically. The audiologist modifies the hearing aid response to the hearing loss of an individual by manually adjusting controls in the hearing aid case.

Programmable Hearing Aids:

Increase the loudness of the incoming signal electrically. Modifications to the response of the hearing aid are made by an audiologist programming an internal microchip via a computer or a hand-held programmer. Some programmable hearing aids may also have a remote control for varied listening situations; others will not.

Bone Conduction Hearing Aids:

A hearing aid fit on some children with a conductive hearing loss, and/or malformed or missing outer ears that are not medically or surgically corrected. This is a specially adapted version of the behind-the-ear style hearing aid.

Transpositional Hearing Aids:

Specialized hearing devices that may be fit on children with profound hearing loss who do not benefit from traditional types of hearing aids.

ACCESSORIES AND/OR ALTERNATIVES TO HEARING AIDS**FM (Frequency Modulated Systems):**

An FM system is a device that may be connected to a hearing aid to improve the ability to hear voices from a distance or to hear speech more clearly in the presence of background noise. An FM system utilizes two primary components; a microphone worn by the speaker conveying sound through wireless transmission to a receiver worn by the child. The receiver may be either a body-worn “box” or an ear-level connector.

The system is designed to amplify the speaker’s voice (*i.e.*, teacher’s voice in a classroom situation) so that it is louder than competing background noise. In some cases, an FM system may be used as the primary amplification system without direct connection to a hearing aid and this arrangement is often determined by the severity of the hearing loss. FM systems may be used with small children at childcare settings, when riding in a car, etc.

Cochlear Implants:

A cochlear implant is an electronic device that is surgically implanted in the cochlea of the inner ear. It has both implanted and externally worn components. It is designed to transmit auditory information directly to the brain, by-passing non-functioning auditory nerves. Those fit with the device require training for interpreting sounds to speech information.

A cochlear implant is a very specialized procedure and has requirements that must be met for a child to be a candidate. More information on candidacy may be obtained from your child’s audiologist and otolaryngologist.



COMMUNICATION CHOICES AND TERMINOLOGY

Communication Choices

Communicating with your child is of the utmost importance. Research shows that early communication is related to the development of positive self-esteem and to language-learning abilities. Responding to your child and encouraging him or her to respond to you is the key to your child's language development. There are different ways to communicate and different philosophies about communication. Every communication choice requires commitment from the family to enable your child to learn language. As you think about how your family now communicates with your child and how you would like to communicate with him or her in the future, you are thinking about communication "methods."

A most difficult decision facing a family with a deaf or hard of hearing child is choosing a communication method. One of the first questions you might ask is "What is the best communication method for my child?" People may tell you **their** method (oral, cued speech, ASL, BI-BI, Manually Coded English, etc.) is **best**. Keep in mind that no one method has been proven to be best for all deaf and/or hard of hearing children. For some children a combination of communication methods may be beneficial.

Decisions regarding communication should be based on your own observations of the needs of your child and family. Ask questions, talk to adults who are deaf and hard of hearing and families with children who have a hearing loss. Discuss, read, and obtain as much information as you can about the various choices. Remember, no decision is irreversible. Monitor your child's progress and reevaluate decisions about your choice. Consider the following questions when choosing a communication method:

- Will the communication method enable all of your family to communicate with your child?
- Is the communication method in the best interest of your child? It should allow your child to have control over his/her feelings and concerns, and participate in the world of imagination and play.
- Will the communication method enhance your relationship with each other as a family? It should promote enjoyable, meaningful communication among all family members and enable your child to feel part of your family and know what is going on.

The following pages provide a brief description of some of the different communication options available to you and your family. This is just a beginning point. These approaches represent a range from spoken English to American Sign Language.

Communication Terminology

American Sign Language (ASL)

American Sign Language is a visual language with its own distinct grammatical structure which must be mastered in the same way as the grammar of any other language. ASL differs from spoken language in that it is visual rather than auditory and is composed of precise handshapes and movements. It is not a form of English



Auditory – Oral

The Auditory-Oral method of teaching spoken language stresses the use of amplified residual hearing (through hearing aids or a cochlear implant), speech, and oral language development. Some programs utilize a multisensory approach (hearing, vision, touch) while others use a unisensory approach without the benefit of speechreading. Both approaches teach children to talk through listening without utilizing a formal sign system.

Auditory – Verbal

The Auditory-Verbal method, much like the auditory-oral method, relies on the principle that children with any degree of hearing loss deserve the opportunity to learn to listen and talk in the mainstream community. Auditory-Verbal therapy is conducted jointly by parents and the auditory-verbal therapist. Emphasis is placed on learning to listen without the use of speechreading or a sign system. It encourages spoken communication development in play.

Bilingual Approach

Bilingualism is the knowledge and regular use of two languages: American Sign Language and English.

Conceptually Accurate Signed English (CASE)

This communication style uses conceptually accurate signs in English word order. Signs are based on American Sign Language.

Cued Speech

Cued Speech is designed to clarify speechreading by using simple hand movements (cues) around the face to indicate the exact pronunciation of any spoken word. Since many spoken words look exactly alike on the mouth (*e.g.*, pan, man), cues allow the child to see the difference between them.

Signed English Systems

Signed English Systems (*e.g.*, Signing Exact English ---SEE II--- Signed English) use signs, fingerspelling, and gestures separately or in combination to represent English manually.

Total Communication

Total Communication was first defined as a philosophy which included use of any or all modes of communication (*i.e.*, speech, sign language, audition, speechreading, and

fingerspelling). This philosophy led to the formation of manual systems (e.g., Signing Exact English, Signed English) that represent spoken English. Today, the term Total Communication is commonly interpreted as Simultaneous Communication (signing while talking).



“Once your child has been diagnosed either deaf or hard of hearing, have your questions written ahead of time and ask the audiologist all the questions you have. Many other questions will come and as they do, write them down and ask the professional. Learn what resources are available—contact them and get information. Get connected with a support group and get involved. It’s never too early to learn what educational settings are available in your area and if there is no appropriate setting for your child, start contacting your representative(s) and requesting that your child not be left behind and request an appropriate setting for them. Be committed to your choice of communication for your child. Do not assume that the responsibility falls solely on the professionals who are working with your child. Have extra supplies on hand at all times (batteries, tubing, etc.). Treat your child as you would any other child; do not set limitations on her ability to participate in any activity. Have the same expectations for her as you would any other child. Involve the whole family in activities surrounding the child’s learning.”

Quote from the Executive Director of the Arkansas Association for Hearing Impaired Children

Ar kansas r esour ces

“I think the main thing is to remember that your child is just that, a child, whether they have multiple disabilities or not. And never be afraid to ask questions, get second opinions, always listen to your gut because you know your child best, and always fight for what you know they deserve. Get help if you are having problems you can’t overcome and know we have all been there. You will be on an emotional roller coaster, especially right after the diagnosis, and will be faced with tough decisions to make that will effect your child’s as well as your family’s lives. Listen to your heart and always fight for your child and you will be fine

Quote from an Arkansas parent of a child identified with a hearing loss.

ARKANSAS RESOURCES

Archild, Inc.

1001 Fair Park Blvd.
Little Rock, AR 72204
Telephone Numbers: (501) 666-2484
Fax: (501) 664-2488

Arkansas Advocates for Children and Families

103 East 7th Street
Suite 931
Little Rock, AR 72201
Telephone Numbers: (501) 371-9678
Fax: (501) 371-9681

Arkansas Association for Hearing Impaired Children

18004 Bunny Lane
Alexander, AR 72002
Telephone Numbers: (501) 316-2442
Toll Free: (877) 504-5778
WEBSITE: www.aahic.org

Arkansas Children's Hospital

800 Marshall Street
Little Rock, AR 72202
Telephone Numbers: (501) 364-1100
WEBSITE: www.archildrens.org

Arkansas Easter Seal Society, Inc.

3920 Woodland Heights
Little Rock, AR 72212
Telephone Numbers: (501) 227-3600
Toll Free: (800) 533-3600

Arkansas School for the Deaf

Mailing: P.O. Box 3811, 72203
2400 W. Markham Street
Little Rock, AR 72205
Telephone Numbers: (501) 324-9506
Fax: (501) 324-9553

Arkansas School for the Deaf Early Intervention

Mailing: P.O. Box 3811, 72203
2400 W. Markham Street
Little Rock, AR 72205
Telephone Number: (501) 324-8541

Assistive Listening Devices Center

Audiology Department
2801 South University Avenue
Little Rock, AR 72204
Telephone Numbers: (501) 569-3155

Centro Hispanic

923 McAlmont
Little Rock, AR 72202
Telephone Numbers: (501) 376-6470
Fax: (501) 376-0880

Charles Bussey Child Development Center,

Pathfinder Schools
1410 West 14th Street
Little Rock, AR 72202
Telephone Numbers: (501) 375-7811
Fax: (501) 375-1945

Children's Medical Services, Division of Medical Services

Mailing: P.O. Box 1437, Slot 526
103 East 7th Street
Little Rock, AR 72203
Telephone Numbers: (501) 682-2277
(800) 482-5850
Ext. 22277
Fax: (501) 682-8247

Francis A. Allen School for Exceptional Children

824 North Tyler Street
Little Rock, AR 72205
Telephone Numbers: (501) 664-2961
Fax: (501) 664-6208

Governor's Commission on People with Disabilities

1616 Brockwood Drive
Little Rock, AR 72207
Telephone Numbers: (501) 296-1626
Fax: (501) 296-1655

Increasing Capabilities Access Network

2201 Brookwood Drive
Suite 117
Little Rock, AR 72202
Telephone Numbers: (501) 666-8868
Toll Free: (800) 828-2799
Fax: (501) 666-5319

Independent Case Management, Inc.

3000 Kavanaugh Blvd.
Suite 203
Little Rock, AR 72205
Telephone Number: (501) 664-7254

Kid's First, Arkansas Children's Hospital

Mailing: 800 Marshall Street, Slot 900
Little Rock, AR 72202
Telephone Number: (501) 364-7510

LIFT

723 Center Street
Little Rock, AR 72201
Telephone Numbers: (501) 372-2256
Fax: (501) 372-0744

**Medicaid Program, DHS Division of County
Operations**

Mailing: P.O. Box 1437, Slot 1222
7th and Main Street
Little Rock, AR 72203
Telephone Numbers: (501) 682-8375
Fax: (501) 682-8367

Success By 6, United Way of Pulaski County

Mailing: P.O. Box 3257, 72203
615 West Markham Street
Little Rock, AR 72201
Telephone Numbers: (501) 376-4567
Fax: (501) 376-7607

**UALR Audiology and Speech Pathology
Clinic**

2801 South University Avenue
Little Rock, AR 72204
Telephone Numbers:
Telephone Numbers: (501) 569-3155
WEBSITE: www.ualr.edu/~audiology

National resources

“As we have observed our daughter grow into a beautiful young woman we have always had the belief that she could achieve as much as our hearing son could. The reality is that it will always be more difficult for her to achieve what she wants to or needs to do in school or in work.”

Parent of child diagnosed with a hearing loss.

NATIONAL RESOURCES

Alexander Graham Bell Association for the Deaf, Inc.

3417 Volta Place, NW
Washington, DC 20007-2778
(202) 337-5220 V/TTY
agbel12@aol.com
www.agbelLcom

An international organization comprised of parents, professionals, and oral children and adults who are D/HH; provides newsletters, journals, and information relating to oral education.

American Society for Deaf Children

1820 Tribnte Road, Suite A
Sacramento, CA 95815
(916) 641-6084 V/TTY
Toll free: (800) 942-2732
asdcl@aol.com
www.deafchildren.org

An organization furthering the services of the International Association of Parents of the Deaf. Provides parent-to-parent support and information utilizing signed communication. Advocates for deaf children and families. Prints the Endeavor (parent newspaper).

Auditory-Verbal International, Inc. (A

VI) 2121 Eisenhower Avenue, Suite 402
Alexandria, VA 22313
(703) 739-1049 V
(703) 739-0874 TTY
avi@auditory-verbal.org
www.auditory-verbal.org

An international organization providing resources and information to parents and professionals on teaching children who are D/HH to speak using residual hearing and amplification.

Beginnings For Parents of Children Who are Deaf or Hard of Hearing, Inc.

3900 Barrett Dr., Suite 100
Raleigh, NC 27609
(800) 541-4327 V/TTY
(919) 571-4843 V/TTY
info@beginningssvcs.com
www.beginningssvcs.com/

A resource and reference organization that produces materials and videos oriented toward helping families make choices about communication methods.

Boys Town Research Hospital- Center for Hearing Loss in Children

555 N. 30th St.
Omaha, NE 68131-9909
(800) 320-1171 V/TTY
deafgene.registry@boystown.org
www.boystown.org/Btnrh/Chlc/index.htm

Provides information on childhood hearing loss to parents, children, other family members, and the public at large.

Cued Speech Center, Inc.
304 E. Jones Street
Raleigh, NC 27601
(919) 828-1218 V/TTY
www.ingenweb.com!cuedspeech/

State funded spoken language programs including training for parents, teachers, etc., auditory-verbal therapy, consultation services, educational counseling, etc.

John Tracy Clinic
806 W. Adams Blvd.
Los Angeles, CA 90007
(800) 522-4582 V/TTY
jtclinic@aol.com
www.johntracyclinic.org

Provides free home study program on teaching spoken language *to* infants and young children who are *D/HH*, plus clinics - all for parents. Available in Spanish.

National Cued Speech Association Nazareth College of Rochester
4245 East Avenue
Rochester, NY 14618
NCSA@naz.edu

A resource and reference organization providing information on services, up-coming events, certification requirements, camps, affiliated centers and organizations, and publications.

SEE Center for the Advancement of Deaf Children
PO Box 1181
Los Alamitos, CA 90720
(562) 430-1467 V/TTY
www.seecenter.org

Provides information on services for deaf children nationwide, parent information packets, workshops, and videotapes on Signing Exact English.

National Information Center on Deafness Gallaudet University
800 Florida Avenue NE
Washington, DC 20002-3695
(202) 651-5051
(202) 651-5052 TTY
C1earinghouse.info.to.go@gallaudet.edu
www.gallaudet.edu

Centralized source *of* information on topics dealing with deafness and hearing loss. Disseminates information on deafness, hearing loss, services, and programs available throughout the United States related to people with hearing loss.

Service Clubs That May Provide Financial Assistance*

Business and Professional Women's Clubs, National Federation
2012 Massachusetts Avenue NW
Washington, DC 20036
(202) 293-1100

Civitan International
1 Civitan Place
Birmingham, AL 35213-1983
(205) 591-8910
(800) CIVITAN

International Shriner's Headquarters
2900 Rocky Point Drive
Tampa, FL 333607
(813) 281-0300

Kiwanis International
3636 Woodview Place
Indianapolis, IN 46268-3196
(317) 875-8755
(800) 549-2647

Lions Clubs International
300 22nd Street
Oak Brook, IL 60521
(708) 571-5466

Pilot International
244 College Street
PO Box 4844
Macon, GA 31213-0599
(912) 743-7403

Quota International
1420 21st St., NW
Washington, DC 20036
(202) 331-9694

Rotary International
1 Rotary Center
1560 Sherman Avenue
Evanston, IL 60201
(708) 866-3000

Sertoma International
1912 East Myer Boulevard
Kansas City, MO 64132
(816) 333-8300

*There may be other service clubs in your community or you may be referred to a local service club.

Media resources

“When you are teaching your deaf child, everything has to be taught deliberately. They do not automatically pick things up from conversations around them, from radio or television like hearing children do. We take so many things for granted, because we can hear.”

Parent of child diagnosed with a hearing loss.

Newspapers/Magazines

Deaf Life

c/o MSM Productions LTD.
PO Box 23380
Rochester, NY 14692-3380
(716) 442-6370
www.deaf.com

Silent News

135 Gaither Drive, Suite F
Mt. Laurel, NJ 08054-1710
(856) 802-1977
www.silentnews.org

The Broadcaster

The National Association for the Deaf
814 Thayer Avenue
Silver Spring, MD 20910-4500
(301) 587-1788

World Around You

(Children) KDES #6
800 Florida Avenue, NE
Washington, DC 20002-3695
(800) 526-9105

The Endeavor

814 Thayer
Silver Spring, MD 20910
(301) 585-5400

Videotapes

American Sign Language ABC Stories, Sign Media, Inc.

An Introduction to the Deaf Community (1993). *A culturally-sensitive overview of social, cultural, and communicative facets of the lives of Deaf people.*

Bravo ASL! Beginning American Sign Language Video Course, Lessons 1-15, Sign Enhancers, Inc

Dreams Spoken Here, Oberkötter Foundation Film Project, 1-800-ORALDEAF, PO Box 50215, Palo Alto, CA 94303-9465

DEAFOLOGY 101 (1993). Deaf culture as seen through the eyes of a Deaf humorist, Ken Glickman. *Many situations unique to the world of the Deaf are explored.*

Fingers that Tickle and Delight (1994). Stories by Evelyn Zola. *A vivid portrait of a deaf woman's life told through insight and humor.*

I Can Hear! Natural Communication, Inc

I Can Hear II! Natural Communication, Inc

Poetry in Motion, Sign Media, Inc

BOOKS

Animal Signs-A First Book of Sign Language, by Warren Estabrooks

Beginning With Babies: A Sharing of Professional Experience, by A. Phillips and E.B. Cole

Buddha's in Disguise: Deaf People of Nepal, by Irene Taylor

Cochlear Implants for Kids, by Warren Estabrooks

The Flying Fingers Club, by Jean Andrews

Foundations of Spoken Language for Hearing Impaired Children, by Daniel Ling

Listening With Your Heart, by Heather Whitestone

Parents In Action: A Handbook of Experiences with their Hearing-Impaired Children, by Grant B. Bitter, Ed.D.

Reading Between the Lips, by Lew Golan

Sesame Street Sign Language, by Linda Bove

A Very Special Friend, by Dorothy Hoffman Levi

When the Mind Hears, by Harlan Lane

Yes You Can Heather! The Story of Heather Whitestone, Miss America, by Daphne Gray



Website Resources

Alexander Graham Bell Association for the Deaf and Hard of Hearing	<u>www.agbell.org</u>
American Academy of Audiology	<u>www.audiology.org</u>
American Society for Deaf Children	<u>www.deafchildren.org</u>
American Speech-Language-Hearing Association	<u>www.asha.org</u>
Auditory-Verbal International, Inc. (A VI)	<u>www.digitalnation.com.avi</u>
Boys Town National Research Hospital	<u>www.boystown.org/Btmh/Index.htm</u>
Central Institute for the Deaf	<u>www.cid.wustl.edu</u>
Cued Speech Center	<u>www.ingenweb.com.cuedspeech</u>
Deaf Digest	<u>www.deafdigest.org</u>
Deaf Related Websites	<u>www.yellowstar.com</u>
The Deaf Resource Library	<u>www.deaflibrary.org</u>
Deaf World Web	<u>www.deafworld.org</u>
Deaf World Web, Cyberkids	<u>www.deafworldweb.org/dww/kids</u>
Deaf/Hard of Hearing	<u>www.familyvillage.wisc.edu/lib.deafhtm</u>
Ear Infections and Ear Tube Surgery	<u>www.kidshealth.org/parent/infections/ear/ear_infections.html</u>
Educational Audiology Association	<u>www.edaud.org</u>
Gallaudet University	<u>www.gallaudet.edu</u>

Hands and Voices	<u>www.handsandvoices.org</u>
Hear Us	<u>www.hearus.org</u>
Hearing Health Magazine	<u>www.hearinghealthmag.com</u>
HIP Magazine (for children)	<u>www.hipmag.org</u>
John Tracy Clinic	<u>www.johntracyclinic.org</u>
KidSource OnLine	<u>www.kidsource.com</u>
Land of the Deaf	<u>www.geocities.com/zaffran/deafhtml</u>
National Association of the Deaf (NAD)	<u>www.nad.org</u>
Oral Deaf Education (Oberkotter Foundation)	<u>www.oraldeafed.org</u>
Self Help for Hard of Hearing People	<u>www.shhh.org</u>
Where Do We Go From Hear?	<u>www.gohear.org</u>

Worksheet for families

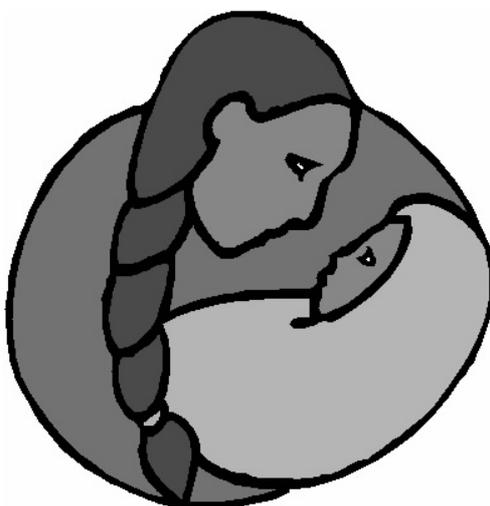
“I have tried, so many times, to imagine what it must have been like for Bob to wake up one morning and realize that he had lost most of his hearing overnight. Hearing was something that he, like most of us, just took for granted until it was suddenly and permanently gone.”

Mom whose son was diagnosed with hearing loss after chemotherapy:

Worksheet for Families

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 decision 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. We encourage you to take the following six steps. A worksheet follows that you may use to record information you gather while visiting programs and meeting providers.



Key point to consider:

1. Know about your child’s hearing. How much they can hear with and without hearing aids or other devices.
2. Become familiar with your 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 don’t know ho to contact them, ask for assistance from your physician or contact the Arkansas Department of Health Help-Line 1-800-235-0002.
4. Talk to other families of children who are deaf or hard of hearing. Talk to several different parents who have made different choices for their family and children.

Provider Questions

(Duplicate and fill out for each provider you speak with)

- What experience do you have with children who have hearing loss?

- What resources are available to reinforce your services?

- How do you evaluate the effectiveness of your services?

- What is the parent role when you provide services?

- What supports do you offer families?

- 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?

- How do you teach us to communicate with our child between visits?

Notes on Our Journey

What are our dreams for our child?

What our fears for our child?

The following parents' names and phone numbers were given to us:

--

--

--

--

We have contacted the following organizations or agencies:

Date: Name of Contact Person: at:

We have visited the following programs or providers who can serve our child:

Program Name:

Communication used with children:

Location:

Telephone number and contact person:

Email:

Dates visited:

Impressions of program:

Impressions of students' ability to communicate:

Family support available:

Program Name:

Communication used with children:

Location:

Telephone number and contact person:

Email:

Dates visited:

Impressions of program:

Impressions of students' ability to communicate:

Family support available:

Program Name:

Communication used with children:

Location:

Telephone number and contact person:

Email:

Dates visited:

Impressions of program:

Impressions of students' ability to communicate:

Family support available:

Program Name:

Communication used with children:

Location:

Telephone number and contact person:

Email:

Dates visited:

Impressions of program:

Impressions of students' ability to communicate:

Family support available:

Program Summary

After visiting programs and reviewing the service options and communication methods, note what you think about each program.

	PROGRAM 1	PROGRAM 2	PROGRAM 3	PROGRAM 4
Things we liked:				
Things we disliked:				
Professional's thoughts: Other parent's thoughts				
We think this option is appropriate (or not) for our child....				
My child will be able to understand information in this setting because.....				
Adults who have been educated this way are now doing.....				
Using this approach we believe that as an adult our child can.....				

Important Contacts and Phone Numbers

Primary Care Physician: _____

Address: _____

Phone: _____ After Hours: _____

Ear Doctor: _____

Address: _____

Phone: _____ After Hours: _____

Speech Language Pathologist: _____

Address: _____

Phone: _____ After Hours: _____

Care Coordinator:/Service Coordinator: _____

Address: _____

Phone: _____ After Hours: _____

Early Intervention Providers or Teachers

Name: _____ Phone: _____

Name: _____ Phone: _____

Name: _____ Phone: _____

Important Contacts

Public School Representative: _____

Title _____ Phone: _____

Address: _____

Other Parents

Name: _____

Address: _____

Phone: _____ Email: _____

Name: _____

Address: _____

Phone: _____ Email: _____

Name: _____

Address: _____

Phone: _____ Email: _____

Other Important Contacts

Name: _____

Phone: _____ Email: _____

Name: _____

Phone: _____ Email: _____

Name: _____

Phone: _____ Email: _____

Glossary

“Shortly after my child was diagnosed with a hearing loss, a counselor told us one of the best pieces of advice we ever received. She said, “Your child is the same child that she was before you found out that she could not hear. The only difference now is that you will have to learn how to communicate with her in a different way.” We never expected less of her than we did our other child who could hear.”

Parent of a child diagnosed with a hearing loss.

GLOSSARY

AUDITORY BRAINSTEM RESPONSE (ABR)	A non-invasive test that measures auditory responses at the level of the brain stem in response to auditory stimuli. This test can indicate whether or not sound is being detected, even in an infant. This test may also be referred to as BAER or BSER. AABR refers to automated ABR screening devices.
ACOUSTICS	Pertaining to sound, the sense of hearing, or the science of sound. Often used to refer to the quality of the sound environment.
ACQUIRED HEARING LOSS	A hearing loss that is not present at birth. Sometimes referred to as adventitious loss.
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 the 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 (<i>e.g.</i> , TTY's, visual alert systems) which improve communication and enhance the listening environment.
AUDIOGRAM	A graph on which a person's ability to hear different pitches (frequencies) at different volumes (intensities) of sound is recorded.
AUDIOLOGIC ASSESSMENT	A comprehensive evaluation of hearing which identifies the type and degree of hearing loss.
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.
AURAL HABILITATION (auditory training)	Numerous teaching methods designed specifically for improving a child's auditory speech perception performance. Methods include auditory experiences of spoken language that are meaningful and appropriate to the child's age and interests.
BABY SIGN	Young children who are hearing do not say all their words correctly; they use a baby talk (ootie means cookie). Young children who are using sign language do not make the signs correctly; they use baby signs (one finger on chin instead of five fingers for the sign "mother").
BILATERAL HL	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).
BINAURAL AMPLIFICATION	Amplification of both ears.
BODY AID	An amplification unit that is worn on the body. Primarily used only in special situations where behind-the-ear hearing aids cannot be used.
BONE CONDUCTION	Sound received through the bones of the skull.
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.
CLOSED CAPTION	TV or movie text presented on the screen.
COCHLEAR IMPLANT	An electronic device surgically implanted to stimulate nerve endings in the inner ear (cochlea) in order to receive and process sound 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.
CONGENITAL HEARING LOSS	Hearing loss present at birth or associated with the birth process, or which develops in the first few days of life.
DEAF	A hearing loss that is so severe that the child is unable to process linguistic information through hearing alone. (Also see Deaf Culture).
DEAF COMMUNITY	A group of people who share common interests 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 cultural aspects of 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.

EARMOLD	A custom-made piece which fits into the outer ear and connects to a hearing aid.												
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.												
FINGERSPELLING	Fingerspelling is a standardized series of hand shapes to form letters.												
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 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.												
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 IMPAIRED (HI)	A term sometimes used to describe any degree of hearing loss.												
HEARING LOSS	The following hearing levels are typically characterized as follows:												
	<table border="1"> <tr> <td>Normal hearing</td> <td>0 dB to 20 dB</td> </tr> <tr> <td>Mild Loss</td> <td>21 dB to 40 dB</td> </tr> <tr> <td>Moderate Loss</td> <td>41 dB to 55 dB</td> </tr> <tr> <td>Moderate-Severe Loss</td> <td>56 dB to 70 dB</td> </tr> <tr> <td>Severe Loss</td> <td>71 dB to 90 dB</td> </tr> <tr> <td>Profound Loss</td> <td>91 dB or more</td> </tr> </table>	Normal hearing	0 dB to 20 dB	Mild Loss	21 dB to 40 dB	Moderate Loss	41 dB to 55 dB	Moderate-Severe Loss	56 dB to 70 dB	Severe Loss	71 dB to 90 dB	Profound Loss	91 dB or more
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HEARING SCREENING	Testing of the ability to hear selected frequencies at intensities above normal hearing. The purpose is to identify individuals with potential hearing loss, with minimal time expenditure, and to refer them for further testing.												

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.
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 FAMILYSERVICE PLAN (IFSP)	The 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. Infant-Toddler Services provides service coordination, screening, evaluation, assessment, and intervention.
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.
INTONATION	The aspect of speech made up of changes in stress and pitch in the voice.
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.
MONAURAL AMPLIFICATION	Use of one hearing aid
MULTIDISCIPLINARY 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.
NATURAL ENVIRONMENT	Defined by the Individuals with Disabilities Education 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 a hearing loss who talk but do not necessarily use sign language. Emphasis is placed on use of spoken language.

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)	An audiologic test that verifies cochlear activity, often is used in screening for hearing loss and in evaluating infants suspected of hearing loss.
OTOLOGIST	A physician who specializes in medical problems of the ear.
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 in the public schools.
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.
PHONEMES	Individual speech sounds.
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.
PRAGMATICS	The social use of pre-symbolic (crying, pointing) and symbolic language (speech, sign) to comment, request, deny, question, etc.
PRELINGUAL HEARING LOSS	Hearing loss which is present at birth or occurred prior to the development of speech and language.
PRESYMBOLIC COMMUNICATION	Behaviors (eye contact, touching, crying, gesturing) a child uses to communicate wants and needs before symbols (speech/sign) are used.
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.
RELAY SERVICE	Relay Service/Relay Network -A service which involves an operator "relaying" conversation between a TTY /TDD user (generally a person with a hearing loss and/or speech disorder) and a hearing/speaking individual using an ordinary, non-adapted phone.
RESIDUAL HEARING	Auditory abilities of an individual with a hearing loss (i.e., the amount of usable hearing).
SEMANTICS	The use of language in meaningful referents, both in word and sentence structures.

SENSORINEURAL	A type of hearing loss caused by damage that occurs to the inner ear (cochlea) and/or the nerve of hearing. Sensorineural damage is usually irreversible.
SIGN BABBLING	Infants who hear put sounds together (babble) before they talk. Infants who are exposed to sign language put handshapes together (sign babble) before they sign.
SIGNESE	Families who are hearing talk to their infants in a special way called motherese or parentese. Families who are deaf sign to their infants in a special way called signese.
SPEECH AWARENESS THRESHOLD (SAT)	This is the faintest level at which an individual detects speech 50% of the time.
SPEECH BANANA (SPEECH ZONE)	The area on an audiogram where most conversational sounds of spoken language occur. It is called the "speech banana" because of the shape.
SPEECH INTELLIGIBILITY	The ability to be understood when using 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.
SPEECHREADING (LIPREADING)	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.
SUPRASEGMENTALS	Parts of speech that include breath control, loudness, pitch, and duration. There are corresponding parts in sign production.
SYNTAX	The way in which words are put together to form sentences, clauses, and phrases.
TACTILE AIDS	A type of assistive communication device that emits a vibration or "tactile" signal to indicate the presence of sound(s). It is worn on the body and triggers the sense of touch or feeling to draw attention to information that cannot be heard by the individual with hearing loss.
TELECOMMUNICATION DEVICES (TTY /TDD)	TTY = Teletypewriter. TDD = Telecommunication Device for the Deaf. Originally and often still called TTY's, these electronic devices allow the deaf and hard of hearing to communicate via a text telephone system. This term appears in ADA. (Americans with Disabilities Act) regulations and legislation.
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.