TENNESSEE
HANDS & VOICES™

www.tnhandsandvoices.org

For Families of Children
Who Are
Deaf / Hard of Hearing

IN TENNESSEE

"The need and right to communicate is the most fundamental of human rights.
To deny it is to harm the human spirit; to foster communication is to reveal all the possibilities of life." (National Deaf Education Project)

HANDS & VOICES™

What works for your child is what makes the choice right

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Editor's Note: The authors of this guide do not officially endorse or certify any of the resources/service providers listed in this publication. It is the reader's responsibility to check the validity and references of anyone listed in this guide

Available online at www.tnhandsandvoices.org

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INTRODUCTION

So you want to know about resources for the deaf and hard of hearing...

This Resource Guide is for you. Whether you're a parent who has just discovered your child has a hearing loss, or you're a teacher, a school administrator, an audiologist, or someone else related to the community of deaf and hard of hearing individuals, this booklet is for you.

Please use it to:

- Connect families of children who are deaf or hard of hearing to each other for support.
- Explore choices for communication options that are presented in an unbiased way.
- Find out about services and supports available to families and professionals.
- Find out about services and supports available to families and professionals.
- Get information on resources for financial assistance.
- Learn about the rights of individuals who are deaf or hard of hearing and how to advocate for them.
- Discover community support systems, resources and programs.

As you look over this packet, you may come up with questions and ideas you haven't considered before as you play your role in enhancing the quality of life for a child with deafness or hearing loss. Remember--the options and decisions facing any family are theirs alone to make, with information and support from professionals. There is no one "right" way when it comes to finding the program that will empower a child to succeed. His or her needs, as well as the needs of the family, will change with time. It is very important to see this all as a work in progress. Don't be afraid to remain open to new ideas, and even change your approach if necessary. And remember, research clearly shows that a communication choice should not be solely based on the degree of hearing loss. For families of babies newly identified with hearing loss, some important first steps are follow up care, understanding communication/early intervention choices, and connecting to other families like yours for information and support. The Roadmap for Families, Loss and Found video, and Book of Choice are other great starting out resources outlining important first steps.

Loss and Found: a video explaining what to do if your baby didn't pass the newborn hearing screening; http://handsandvoices.org/resources/video/index.htm

The Book of Choice: parents of children who are deaf or hard of hearing sharing stories and information; http:// handsandvoices.org/resources/products.htm#boc We encourage you to join Colorado Families for Hands & Voices, a non-profit, non-biased support system for families and professionals. You're not alone, and we can help.

GETTING STARTED

“YOUR CHILD HAS A HEARING LOSS"

Even though you may have suspected there was a problem, hearing a doctor or audiologist say “Your child has a hearing loss”, may have come as a shock to you. Most people do not know much about hearing loss and what it means for their child and family. As the professional who delivered this news to you talked further, you may not have heard much of what he or she was saying. In your mind, questions may have started to churn:

“Can it be corrected?"“What caused it?"“Will it get better?"“Will it get worse?"“Can he learn to talk?"“Can she go to regular school?”“If we have more children, will they be deaf, too?" “Can he get married?"

“Will she be able to get a job?"

The answers you get to some of these questions may not be what you want to hear; “No, this type of hearing loss cannot be medically or surgically corrected." Or “We don't know for sure what your child's future holds - it depends on a lot of things." You want the best for your child, and now you are not sure you know what to do.

In the days and weeks following the diagnosis of your child's hearing loss, you may feel like 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 within yourself unexpected sources of strength to do what has to be done in spite of feeling that you are living under a cloud.

The professionals who evaluate your child's hearing will have recommendations for you: see an ear specialist, meet with early intervention professionals, and have more testing done. As you follow these recommendations, you will meet people who can help answer your questions and explain the decisions you must make. The information they give you and opinions they express may also create more confusion for you!

You will be making many decisions in the days ahead. Give yourself the time you need to make decisions that feel right for your family. Keep in mind there are very few decisions you will make that you cannot change.

WHO CAN HELP?

You will meet new people as a result of your child's hearing loss. Some of these people will be medical professionals, some will be parents and caregivers of other children with hearing loss, some will be educators, and some will be audiologists. Here is a brief description of ways in which each of these groups may be of help to you.

AUDIOLOGIST

The audiologist can help by:

- Having the appropriate equipment and the skills to test the hearing of infants and toddlers.
- Obtaining complete information about your child's hearing in each ear at a range of frequencies.
- Carrying out, or referring infants or difficult-to-test children for, Otoacoustic Emissions (OAE) testing and Auditory Brainstem Response (ABR) testing, when necessary.
- Recommending appropriate amplification if chosen by the family.
- Keeping your child equipped with well-fitting earmolds.
- Testing your child while wearing amplification and questioning parents about their child's responses to sounds at home.
- Giving you information about early intervention programs available to your family.
- Working in partnership with you and early intervention specialists to monitor and maintain your child's amplification systems (Hearing aids, FM systems, cochlear implants).
- Helping your child learn to use amplification.
- Helping to make sure amplification is working properly, and teaching you how to make sure equipment is working properly. Teaching you how to troubleshoot problems.
- Keeping records of your child's progress in acquisition of listening skills.

TENNESSEE'S EARLY INTERVENTON SYSTEM (TEIS)

- Initial in-home visit at which time communication options are discussed and demonstrated and programs specific to the needs of deaf and hard-of-hearing children in the community are explained.
- Emotional support is offered.
- Assistance in securing funding for intervention services and hearing aids.
- Connections to other resources within the community.
- Service Coordination.
- Printed materials and video-tapes are shared with families.
- Representation at IFSP meetings and IEP meetings.
- Consultation with school districts around transition issues.
- Connection to the state-wide parent support group, Tennessee Families for Hands & Voices.

PEDIATRICIAN OR PRIMARY CARE PHYSICIAN (PCP)

Your child's primary care physician can help by:

- Referring you to an audiologist skilled in testing the hearing of infants and toddlers when you express concern about your child's hearing.
- Referrals to other specialists as needed (E.N.T., Genetics Counseling etc)
- Answering your questions about medical or surgical treatment of different types of hearing loss.
- Confirming the need for prompt action involving amplification and early intervention once your child has been diagnosed with hearing loss.
- Putting you in touch with early intervention programs.
- Treating your child - or referring to ear specialists - when your child has middle ear disease that increases his/her degree of hearing loss.

OTOLOGIST, OTOLARYNGOLOGIST (ENT)

The ENT can help by:

- Confirming that there is not a medically treatable condition in your child's outer ear or middle ear that is causing the hearing loss.
- Answering your questions about medical or surgical treatment of different types of hearing loss.
- Scheduling further procedures (i.e. urinalysis, CT scan) to rule out other causes of the hearing loss.
- Signing a form authorizing use of hearing aids with your child (required by law in some states before hearing aids can be fit on a child).
- Placing ventilation, or PE, tubes in your child's eardrums if he has chronic middle ear disease that is not resolved by antibiotics in a timely way.

OTHER PARENTS OF DEAF OR HARD OF HEARING CHILDREN

Other parents can help by:

- Sharing experiences they have had with professionals and early intervention programs.
- Telling you about people and information sources they have found useful.
- Listening to you.
- Sharing with you their feelings related to parenting a child with hearing loss and how their feelings have changed over time.
- Telling you about their child's achievements.
- Getting together with you so your children can play together.

DEAF AND HARD OF HEARING ADULTS

Deaf and hard of hearing adults can help by:

- Sharing personal experiences and information by a D/HH individual.
- Sharing educational, social, and cultural experiences and perspectives.
- Modeling different means of communication.
- Acting as a role model for the parents and D/HH child.
- Bringing hope to families about overcoming challenges and creating success. *Sections of page 3 – 5 were adapted with permission, from "For Families Guidebook" copyright, Hearing & Speech Inst. Portland, OR*

STAGES OF GRIEF: ACCEPTING THAT YOUR CHILD HAS A HEARING LOSS

As a parent of a deaf or hard of hearing child, the grief process is real and can recycle periodically through the child's life. There are several theories on the stages of grief. Summarized below is one accepted process that parents may experience with a child with a hearing loss.

1. Denial – Parent does not accept that the child truly has a hearing loss
2. Anxiety – Parent worries about the child's future and how their child will function in society
3. Depression – Parents ask questions. "Why did this happen? Why me? Why my child? "
4. Anger – Parents may say "this is not fair", "we do not deserve this"
5. Guilt – Parents may think it is all their fault that their child has a hearing loss
6. Acceptance – Parents education themselves about hearing loss and become an advocate for their child. They realize that their child can be successful in a mainly hearing world.

Helpful Links

http://thecareproject.me/

COMMUNICATION CHOICES

Communicating with your child is of the utmost importance! Two-way communication, responding to your child and encouraging your child to respond to you, is the key to your child's language development. There are different ways to communicate and different philosophies about communication. As you think about how your family communicates now with your child and how you would like to communicate with him or her in the future, you are thinking about the communication methodology/mode issue. The best way to decide which approach to communication will be best for your child and family is to be open about all the modes, learn, ask questions, talk to adults who are Deaf and Hard of Hearing and other families with children who have a hearing loss, as well as professionals. Discuss, read, and obtain as much information you can about the various methods. While some parents select a spoken language approach, others will select one of the visual (sign) options. Because the various communication options differ significantly, it’s essential that parents be fully informed about each of the options so that they can choose the best fit for their family.

FACTORS TO CONSIDER

Consider and answer the following questions when choosing a communication mode:

- Will the communication mode enable all your family to communicate with your child?
- Is a given option a good match for my child and our family?
- Do you feel comfortable with the amount of information you have received about all the modes/ methods of communication? Have you talked to a variety of people and heard a variety of perspectives on each choice?
- Is the communication mode in the best interest of your child? Does it allow your child to have influence over his/her environment, discuss his/her feelings and concerns, and participate in the world of imagination and abstract thought?
- Does the communication enhance your relationships 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 the happenings of everyday life.
- Has the information you have received about communication choices delivered to you in an unbiased manner?
- Are you looking at your choice of communication in terms of what will be best for your child and family, and not what someone has promised you about a certain method?
- Does my child have any additional disabilities that need to be considered as we choose a various communication options?
- What kind of school/academic experience do I want for my child? How important is it that my child be educated in a typical classroom or with other children who have hearing loss?

- What are the long-term goals for our family and child?

Thoughts from parents of older children:

- You may find that children may shift in communication modes as they grow and develop their own communication preferences.
- Children may also shift quickly in response to changing environments.
- You may find you are considering and/or using a variety of choices as time goes on.

When seeking professional support, know that professionals in both the fields of medicine and education specialize in hearing and deafness. Their expertise and perspectives may vary, which can create confusion for parents trying to make the choice that is right for their child. Some professionals are willing to be interviewed by phone or email prior to an appointment when parents are considering using their services. Consider the following questions:

- Do you have a particular communication or educational philosophy in regard to children with hearing loss?
- What experience do you have working with children with a similar background and degree of hearing loss as my child?
- Which communication options have been used with the children with whom you work?

COMMUNICATION CHOICES - DEFINITIONS

AMERICAN SIGN LANGUAGE (ASL)

American Sign Language (ASL) is a fully developed, autonomous, natural language with distinct grammar, syntax, and art forms. Sign language can perform the same range of functions as a spoken language. "Listeners" use their eyes instead of their ears to process linguistic information. "Speakers" use their hands, arms, eyes, face, head, and body. These movements and shapes function as the "word" and "intonation" of the language. If parents are not deaf, intensive ASL training is necessary in order for the family to become proficient in the language.

AUDITORY-ORAL (AO)

This method of teaching spoken language stresses the use of amplified residual hearing, speech and oral language development. Additionally, it allows for emphasis on speech reading and visual clues from the face or body. Tactile methods may also be used to encourage the child to feel the sounds of speech. Parents need to be highly involved with child's teacher and/or therapists to carry over training activities to the home and create an optimal "oral "learning environment.

AUDITORY-VERBAL (AV)

This approach to teaching spoken communication concentrates on the development of listening (auditory) and speaking (verbal) skills. It emphasizes teaching the child to use his or her amplified residual hearing and audition from amplification (hearing aids and/or cochlear implants) to the fullest extent possible. A high degree of parent involvement is necessary as parents learn methods to integrate listening and language throughout daily routines.

CUED SPEECH

This system is designed to clarify lip reading 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. Cued speech can be learned through classes taught by trained teachers or therapists. A significant amount of time must be spent using and practicing cues to become proficient.

SIMULTANEOUS COMMUNICATION

Simultaneous communication occurs when a person uses sign language and spoken English at the same time. The signs used may be an exact match to the spoken message (Signed Exact English). Or, a person may sign some, but not all, of the words in the spoken message (Pidgin Signed English). The words that are signed and the words that are spoken occur simultaneously. Parents must consistently sign while they speak to their child. Sign language courses are routinely offered through the community, local colleges, adult education etc.

TOTAL COMMUNICATION (TC):

The term Total Communication was first defined as a philosophy, which included use of all modes of communication (i.e. Speech, sign language, auditory training, speech reading and finger spelling). Today the term Total Communication is commonly interpreted as Simultaneous Communication (signing while talking). This philosophy led to the formation of manual systems (e.g. Signing Exact English - Signed English) that attempt to represent spoken English.

Strongly recommended resources include:

Choices in Deafness: A Parent's Guide. A collection of family stories about their deaf child and the communication method they use. Edited by Sue Schwartz, Ph.D. Woodbine House, 2006

The Book of Choice: Support for Parenting a Child Who Is Deaf or Hard of Hearing.

Beginnings DVD http://ncbegin.org

HEARING LOSS QUESTIONS

COMMON QUESTIONS TO ASK MY AUDIOLOGIST and/or ENT PHYSICIAN?

1. Is my child's hearing loss permanent?
2. How often should my child's hearing be tested?
3. Will my child's hearing loss get worse?
4. Do both ears have the same amount of hearing loss?
5. How will the hearing loss affect my child's speech and language development?
6. What could be the cause of the hearing loss?
7. What type of testing can we do to determine the cause of the hearing loss?
8. What is the best device for my child? Hearing aids, cochlear implants, Baha?
9. How much do hearing aids cost? Will my insurance or other agency help to cover costs?
10. How much will my child's hearing be improved with hearing aids?
11. How many years will hearing aids last?
12. How often do we need to replace the earmolds?
13. Do you have another parent of a child with hearing loss that I can talk to?
14. How often will we need communication therapy?

FACTS REGARDING HEARING LOSS

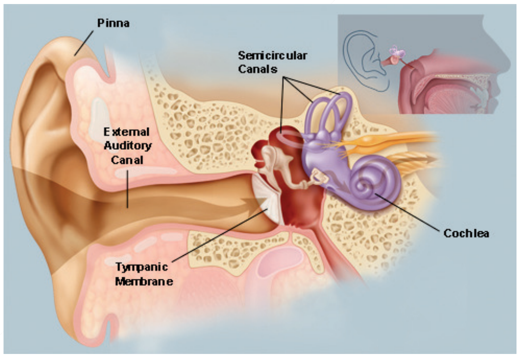
WHAT IS THE INCIDENCE OF HEARING LOSS?

- Hearing loss is the most common congenital disorder.
- 3/1000 newborns having some degree of loss.
  - 1 in 1000 infants are born with profound hearing loss.
  - 2-3 in 1000 infants are born with partial hearing loss.
- Some will develop hearing loss after birth
- 90% of infants with hearing loss are born to hearing parents.
- 30 – 40% of children with hearing loss have at least one additional handicapping condition.

WHAT ARE THE DIFFERENT TYPES OF HEARING LOSS?

- Sensorineural (SNHL):
  affects inner ear to include the cochlea and VIII nerve
  typically cannot be treated medically or surgically
- Conductive (CHL)
  affects the middle or outer ear
  can be temporary or permanent
  surgery may improve hearing in some cases
- Auditory Neuropathy/Auditory Dys-synchrony (AN/AD)
  affects the inner ear to include the cochlea and VIII nerve
- Mixed
  typically a combination of SNHL and CHL

THE EAR

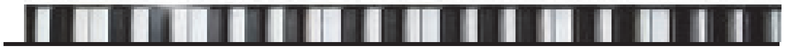


WHAT IS AN AUDIOGRAM?

- The audiogram is a graph or picture that shows how the child hears.

- This audiogram (Audiogram of Familiar Sounds) is typically used for counseling. It shows where various s
are in relation to pitch and loudness.
- The audiogram can show the type and degree of hearing loss.
- The child’s responses are plotted based on pitch (frequency/Hz) and loudness (intensity/dB)

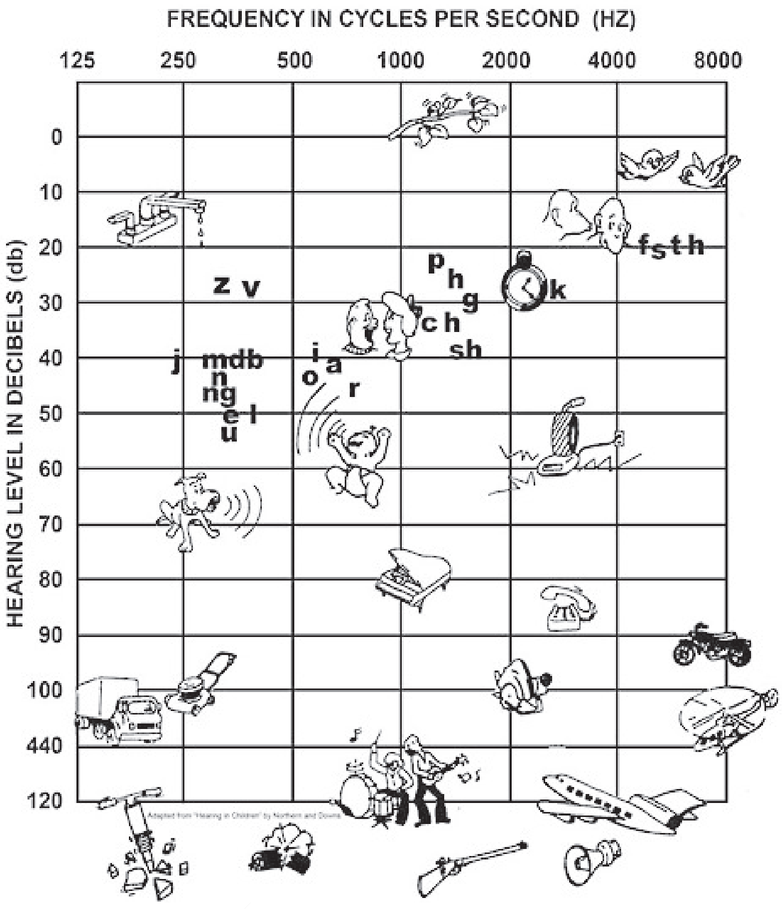
Bass Notes **Treble Notes**



Degree of Hearing Loss

0 -15 dB	Normal
16-25 dB	Slight
26-40 dB	Mild
41-55 dB	Moderate
56-70 dB	Moderately Severe
71-90 dB	Severe
91 dB and >	Profound

ASHA 1981



www.audiology.org *(AAA)*

- The numbers across the top are from 250-8000 Hz which represent frequencies (pitch) of sound. Think of them like the keys on a piano ranging from bass notes to treble notes. The X is marked in BLUE on the audiogram and represents the LEFT EAR. The O is marked in RED and represents the RIGHT ear.
- Each X and O are marked at the corresponding frequency and intensity where the child responds to create a “graph of the child’s hearing”.

DESCRIPTION OF DEGREE OF HEARING LOSS VS.

POTENTIAL EFFECTS

Every child is different. The potential effects of a hearing loss depends on many factors including degree of loss, but also upon early identification and amplification, early intervention services, and parent involvement.

MILD 20-40 dB HL May have difficulty hearing faint or distant speech. A child with mild loss may miss up to 10% of speech signal when speaker is at a distance greater than three feet, or if the environment is noisy. Likely to experience some difficulty in communication & education settings. Consider need for hearing aid and intervention.

MODERATE 45-50 dB HL Understands conversational speech at a distance of 3-5 feet if the loss is in the 35dB range but may miss up to 75% of conversational speech if the loss is in the 50dB range. Amplification may enable listener to hear & discriminate all sounds. Without amplification, 50% to 100% of speech signal may be missed. Speech may be affected unless optimally amplified.

MODERATELY/SEVERE 60-70 dB HL Conversation must be very loud to be heard without amplification. A 55dB loss can mean 100% of the speech signal missed. May have difficulty in settings requiring verbal communication, especially in large groups. Delays in spoken language & reduced speech intelligibility expected without intervention & amplification.

SEVERE 75-90 dB HL If loss is pre-lingual, spoken language & speech may not develop spontaneously, or could be severely delayed unless modifications & interventions are taken. With optimal amplification, should be able to detect all the sounds of speech and identify environmental sounds. Without amplification, is aware of loud voices about one foot from the ear and likely to rely on vision for communication.

PROFOUND >90 dB HL or greater Aware of vibrations more than tonal pattern. Many rely on vision rather than hearing as the primary avenue for communication and learning. Speech and oral language will not develop spontaneously without modifications and intervention. Speech intelligibility often greatly reduced and atonal voice quality likely. Residual hearing can benefit from amplification. Potential candidate for a cochlear implant. Use of a signed language or a signed system may benefit language development.

UNILATERAL HEARING LOSS Until recently, children with unilateral hearing loss did not have their hearing loss detected until they were in school. Now, with the advent of newborn hearing screening, we are detecting the presence of a unilateral, hearing loss during the first year of life. A review of the literature indicates that children with unilateral hearing loss may be at risk for speech and language delays and/or academic challenges. We don't know, however, which children are at risk. We also do not know at precisely what age the unilateral hearing loss has an impact. The Colorado Home Intervention program (CHIP) offers consultation to families of children with a unilateral hearing loss until that child reaches 3 years of age. As part of the consultative service, we suggest parents participate in an evaluation of the child's development. In this way, we can detect if and when the hearing loss affects the child's development. While some children will never exhibit an effect from the hearing loss others may experience some challenges. Contact your CO-Hear or CHIP for more information. (see resources list for contact info.)

AUDITORY NEUROPATHY SPECTRUM DISORDER (ANSD) (also sometimes known as Auditory Dys-synchrony) Auditory neuropathy spectrum disorder is a hearing disorder in which sound enters the inner ear normally but the transmission of signals from the inner ear to the brain is impaired. It can affect people of all ages, from infancy through adulthood. The number of people affected by ANSD is not known, but the condition affects a relatively small percentage of people who are deaf or hard of hearing. People with ANSD may have normal hearing, or hearing loss ranging from mild to severe; they always have poor speech-perception abilities, meaning they have trouble understanding speech clearly. Often, speech perception is worse than would be predicted by the degree of hearing loss. For example, a person with ANSD may be able to hear sounds, but would still have difficulty recognizing spoken words. Sounds may fade in and out for these individuals and seem out of sync. Taken from: http:// www.nidcd.nih.gov/health/ hearing/neuropathy.asp Hearing aids may or may not benefit these children. Cochlear implants may benefit individuals when traditional amplification fails.

For more information regarding hearing loss and listening and learning needs, see better hearing: www.betterhearing.org/hearing_loss/children_hearing_loss/relationship_hearing_loss_learning.pdf

AMPLIFICATION OPTIONS

WHAT IS A HEARING AID?

- A hearing aid can make sounds louder for your child so your child can hear speech better. All children under the age of 18 must have medical clearance prior to being fit with hearing aids. It is recommended that all children with hearing loss be seen by an ENT physician (otolaryngologist) to complete blood work and imaging (CT and MRI) to possibly determine the cause of your child's hearing loss (etiology studies). The ENT can also provide medical clearance prior to being fit with hearing aids. In most cases, if your child has a hearing loss in both ears, then a hearing aid for each ear may be issued. The audiologist, together with the parents, will decide which type of hearing aid is best suited for the child. Hearing aids are selected based on the type, degree, configuration and etiology of the child's hearing loss.

WHAT ARE THE DIFFERENT TYPES OF HEARING AIDS?

Hearing aids come in several style options. Here are the most common styles for children of all ages:

Behind-the-Ear (BTE)

- Positioned behind the ear
- Coupled to an earmold or slim tube
- Can be easily connected to an FM system for use at school
- Available in a variety of colors and stickers to accessorize
- are most often recommended for smaller children since their ears are not yet full grown

In the Ear (ITE)

- May be used for older children and adults when the ear is full grown
- Typically not used in young children due to ear canal growth and safety issues with the hard shell

In the Canal (ITC)

- May be used for older children and adults when the ear is full grown
- Typically not used in young children due to ear canal growth and safety issues with the hard shell

Receiver in the Ear (RITE)

- May be used for older children and adults when the ear is full grown
- This newer style aid is very popular for teens and adults as it is very cosmetically appealing

Slim Tube/Open Fit

- May be used for older children and adults when the ear is full grown
- This newer style aid is very popular for teens and adults as it is very cosmetically appealing

WHAT IS AN EARMOLD?

Earmolds 

- made of soft materials for young children
- can typically be made to swirl up to 3 colors together, add glitter or glow in the dark
- can be made of harder material for older children
- will need to be replaced as the child grows.
- may need to be replaced every 3-6 months when children are young.
- sometimes as a child's shoe size changes, new earmolds may also needed.
- will need to be remade as the child grows and could be as early as every 6-8 wks for B-3.

WHEN SHOULD MY CHILD GET A HEARING AID?

Newborns should have a hearing test at birth. Early Hearing Detection and Intervention (EHDI) recommends that all children be screened by age 1 month, be diagnosed with hearing loss with by age 3 months and begin intervention (including hearing aids and communication therapy) by age 6 months of age.

HOW DOES A HEARING AID WORK?

Acoustic 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/ Hz) and intensity (loudness/dB). The sound is then sent to the receiver and delivered into the ear.

• WHAT ARE THE PARTS OF A HEARING AID?

●

- **The hearing aid has 3 basic parts:**

  Microphone

  Amplifier

  Receiver

TELL ME ABOUT THE BATTERIES

- The hearing aid works using a small battery
- Size 13 (orange) & 675 (blue) are most commonly used for children.
- Battery life varies based on program settings and use of device.
- Batteries can be dangerous if swallowed.
- Keep batteries away from pets and small children

TELL ME ABOUT THE OTHER PARTS OF THE HEARING AID AND EARMOLD

Earmold: Custom made to seal the ear to hold BTE hearing aid in place, deliver sound to the ear and prevent feedback (whistling).

Tubing: Soft, flexible, connects the earmold to the BTE hearing aid; securely attaches to the earmold. Tubing must be replaced periodically as it hardens

Earhook: Curved, hard plastic that supports the hearing aid on top of the ear; protects the receiver and carries the sound to the earmold and then to the ear canal. Filters (in different colors) can be in earhooks to further shape the sound for hearing loss.

Slim Tube: A thin tube that connects to the BTE hearing aid and then attached to a dome or slip tip. This newer option is for older children and adults and is very cosmetically appealing.

Receiver: The speaker inside the hearing aid that opens to the earhook.

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

Program Button: Typically a push button which allows for easy access to various programs and features for older children and adults.

Volume Control: A wheel, button or toggle switch where the child can increase and decrease the volume. This feature is typically disabled for young children. Some newer instrument may have one button to serve as a program and/or and volume control.

Battery Door: Holds the battery in place; opening the door will turn the hearing aid off. Tamper resistant battery doors are available and should be used for all young children or children with younger siblings

THIS IS ALL GREAT BUT HOW WILL I GET MY CHILD TO WEAR THE HEARING AID?

- The goal is the wear the hearing aid during all waking hours.
- Begin allowing the child to wear the aids for short periods of time (15-30 minutes 3-4 times a day at a minimum).
- Increase the wearing time by 15-30 minutes for each of the 3-4 sessions.
- Have several of the child's favorite toys, games, activities and videos available for these short periods of time.
- We want the child to associate listening with "fun" time and enjoy the listening experience.
- Keep a diary and note the amount of time the child is wearing his/her aid(s) daily. Make note of observations. Share the diary with the audiologist.

WHICH HEARING AID MANUFACTURER SHOULD I CHOOSE?

Your audiologist will guide you in this decision. Most pediatric audiologist will have a few manufacturer which they prefer to use for children. Ask you audiologist why he or she uses a certain manufacturer or device. You may also visit the websites to familiarize yourself with the options.

Here are a few pediatric hearing aid manufacturers

www.oticonusa.com

www.phonak.com

www.siemens-hearing.com

www.starkey.com

www.unitron.com

www.widex.com

DAILY HEARING AID CHECK

- Use stethoset to listen to hearing aid
- Turn hearing aid "on" and attach earmold to stethoset.
- Use the Ling Sounds (eee, ooo, ahhh, s, sh, m).
- The aid should sound clear.
- You should NOT hear noise, static, "motor boating", intermittency or distortion.

If not clear, remove earmold and tone hook and listen again. The problem could be the earmold and/or tone hook and not the aid.

FM SYSTEMS

An FM system is an assistive listening device (ALD) which can be used with or with out the child's personal hearing aids. The FM system will improve the signal to noise ratio in noisy environments such as a restaurant, car, party or classroom.   There are 3 issues where hearing aids alone are limited: noise, distance and reverberation (echo). The FM system directly solves the issue of distance by utilizing a transmitter (microphone) for the speaker, which is typically worn at the mouth (boom microphone) or 6 inches from the mouth (lapel microphone). Your child's audiologist can test to see if your child may potentially benefit from an FM system. Additional information about FM systems can be found at: www.phonak.com, www.oticonusa.com as well as other manufacturers.

COCHLEAR IMPLANTS

-

The cochlear implant has 3 basic external parts:

Processor
Controller/battery rack OR battery module
Coil Cable/ headpiece

The cochlear implant works using small disposable batteries or rechargeable batteries

- Disposable batteries are size 675 specific for CI use (2 or 3)
- Rechargeable batteries are available for most CIs
- Battery life varies based on program settings and use of device
- Batteries can be dangerous is swallowed
- Keep batteries away from pets and small children

How does a Cochlear Implant work?

- Sound waves enter through the microphone.
- The sound processor converts the sound into a distinctive digital code.
- The electrically coded signal is transmitted across the skin through the headpiece/coil to the internal portion of the device.
- The internal device delivers the sound to the electrodes positioned in the cochlea.
- The electrodes stimulate the hearing nerve.
- The hearing nerve sends the signal to the brain for processing.

Steps to Determine Pediatric Cochlear Implant Candidacy

- Audiologic Evaluation
- Medical Evaluation
- Speech Language Evaluation
- Psychological Evaluation
- Educational Evaluation

IS MY CHILD A CANDIDATE FOR A COCHLEAR IMPLANT?

Children (12 - 24 months)

Profound, bilateral sensorineural deafness ($\geq$ 90 dB HL)

Little or no benefit from hearing aids

Children (2 -17 years)

Severe to Profound, bilateral sensorineural deafness ($\geq$ 70 dB HL)

Little or no benefit from hearing aids

The decision to have a cochlear implant is an individual decision if the child meets the candidacy criteria. The cochlear implant team, together with the parents, will make the decision.

There are 3 manufacturers in the United States that are FDA approved. Additional helpful resources are available at these websites.

1. Advanced Bionics	www.advancedbionics.com
2. Cochlear Americas	www.cochlearamericas.com
3. MED EL	www.medel.com

HOW DO I GET MY CHILD TO WEAR THE COCHLEAR IMPLANT?

- Since the child is most likely acclimated to wearing hearing aids, the initial CI wearing schedule is different from the initial hearing aid schedule.
- The child should wear the CI device during all hours in which they are awake. Use a schedule that the child has already become accustomed to with the hearing aids.
- The CI may have 2-4 "progressive maps or programs".
- Begin on P1 and gradually increase overtime to P3/4
- Each time the child device is reprogrammed (remapped), these settings may change.

- The child may still need time to gradually increase wearing time to all waking hours.

- Use monitor earphones to listen to CI microphone.
- Attach monitor earphones to accessory port and turn on processor.
- Use the Ling Sounds (eee, ooo, ahhh, s, sh, m).
- The device should sound clear.
- You should NOT hear noise, static or distortion.
- Remember you are ONLY listening to the microphone. You cannot hear what the child hears.

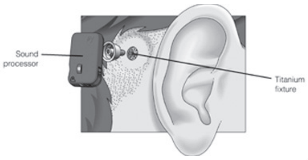
OTHER TYPES OF AMPLIFICATION

Bone Conduction Hearing Aids

- Used for conductive type hearing loss
- Used in the absence of outer ear and ear canal
- Used for excessively draining ears
- Microphone collects sound
- Signal is transmitted to an oscillator
- Oscillator vibrates against the skull
- Inner ear picks up the vibrations and interprets as sound.
- You may listen to this aid simply by placing the oscillator on your forehead or on the mastoid bone behind the ear.

Baha

- Surgically implantable hearing device
- Must be 5 years of age or older
- Must have conductive, mixed or single sided deafness
- Baha soft band may be worn until age 5
- Soft band looks like the BC hearing aid but is digital and programmed on the computer by the audiologist
- Used to be referred to as a bone anchored hearing aid but this term has been discontinued since the Baha is an implantable medical device and not a traditional hearing aid.



TRANSITION TO PRESCHOOL

The transitions between early intervention and preschool services, and later preschool and kindergarten, are emotional for all parents as they watch their children grow. When a child demonstrates a hearing loss, these emotions are magnified. Issues associated with hearing loss coupled with the responsibility of making the right choices for their children often results in a time of uncertainty. The education process can be overwhelming for any parent.

1) The first and perhaps MOST IMPORTANT step in making the transition easier for your child is educating yourself about services or programs available to meet his/her unique needs. Learning about your child's schooling options can help significantly with the IFSP/IEP transition meeting.

The following resources can provide valuable information about education options, hearing technologies, legal rights, and support groups:

- Alexander Graham Bell Association for the Deaf and Hard of Hearing (AG Bell)
  www.agbell.org
  Voice: 202-337-5220
  TTY: 202-337-5221
  Fax: 202-337-8314

- Auditory-Verbal International, Inc.

www.auditory-verbal.org
Voice: 703-739-1049
Fax: 703-739-0395

- Hands and Voices
  www.handsandvoices.org
  Voice: 303-492-6283
  Toll Free Voice: 866-422-0422

- League for the Hard of Hearing
  www.lhh.org
  Voice: 917-305-7700
  TTY: 917-305-7999
  Fax: 917-305-7888

- National Association for the Deaf
  www.nad.org
  Voice: 301-587-1788
  TTY: 301-587-1789
  Fax: 301-587-1791

- National Institute on Deafness and Other Communication Disorders
  Voice: 301-496-7243
  TTY: 301-402-0252

- Oral Deaf Education/OPTION Schools
  www.oraldeafed.org
  Phone: 877-672-5332
  Fax/TTY: 877-672-5889

- Zero to Three: National Center for Infants, Toddlers, and Families
  www.zerotothree.org
  Phone: 202-638-1144

2) Visit local preschool settings and envision your child participating in the program. Try to envision your child in the environment. How would your child interact? What, if any, accommodations need to be made? Is there access to other children or adults using the same communication mode? A checklist can help in this area:

- **Parent Checklist: Preschool/Kindergarten Placement for Children Who are Deaf/Hard of Hearing**
  www.handsandvoices.org/pdf/parent_checklist.pdf

3) Find parent support and collaboration. Parents who are entering this transition period can benefit immensely from knowledge gained by parents who've already experienced the process. There is an article on preschool from a parent's perspective at the link listed below:

- **Surviving Preschool: Experiences of the Reluctant Parent**
  http://www.handsandvoices.org/articles/fam_perspectives/preschool.html

4) Parent involvement is CRUCIAL to the success of any program. Once your child enters into an educational setting, visit with the teachers frequently. Remaining involved will assure that the program is meeting your child's needs. Consultation with your child's teacher, speech-language pathologist, and audiologist is vital to monitor your child's progress. The following assessment is available to assure the program is meeting your child's individual needs:

- Functional Auditory Performance Indicator
  www.cde.state.co.us/cdesped/download/pdf/FAPI_3-1-04g.pdf

- For more on transitions, see "Bridge to Preschool" at: www.handsandvoices.org/pdf/TransRevised0107.pdf

This page Adapted from Supporting Families in Transition between Early Intervention and School Age Programs by Cheryl Johnson, at www.handsandvoices.org

Communication Considerations at the Time of Transition from Part C to Part B Services

by Janet DesGeorges

1. What are the Communication Considerations for Transitions from Part C to Part B? (Early Intervention B-3 services to School Age services)

When a child turns three, Intervention services they were receiving under Part C, now moves to the educational arena of Part B of the IDEA. Transition planning from an IFSP to an IEP includes moving from a "family- centered" model to a "student-centered" model of services. The impact of communication choices, availability of services, and student needs in a classroom setting begins to emerge in a way that parents must be prepared for.

2. What issues are at the forefront of Transition from Early Intervention to School Based Services?

The issues that are at the forefront of the transition process usually center on the following areas:

a. Eligibility of the child for Part B services:

"Disability" alone does not qualify a child for special education. Eligibility depends on a qualifying condition and the need for specialized instruction and related services. Particularly for children who have been early identified and well served in early intervention, this may be an issue. Eligibility teams often mistakenly look at only one component of a child's progress (academic) and fail to address the communication needs, the social/emotional needs, as well as the academic needs of the student. For example, even if a child is doing 'well', does the child need access to an FM system, access skills (i.e. the ability to be understood), or sign language support?

- Parents Role as part of an IEP 'team' rather than primary decision makers. Parents must be prepared to negotiate school services as part of a 'team' through honing advocacy skills and being able to articulate a child's communication needs. Parents should know the difference between their right to choose their child's 'language' vs. an IEP team determination of services or methods.

- Availability of a continuum of services/school settings/communication modes offered at the school level. The beauty of special education is that the student's unique needs should be addressed based on their individual needs, not just what a school 'has to offer'. When a school offers support for only one communication mode, it is the right of parents to advocate that their child's communication needs be supported.

3. What should every parent or professional know about their rights regarding communication options as they enter the school years?

For the first time in IDEA history, the reauthorization of 1997 included language regarding the communication needs of students who are deaf and hard of hearing that still exists today. At its very essence, "Communication Considerations" is now REQUIRED to be considered at every student's IEP Planning meeting.

4. Where else can I find information about this subject?

Bridge to Preschool: Navigating a Successful Transition http://www.handsandvoices.org/pdf/TransRevised0107.pdf

Supporting Families in Transition between Early Intervention and School Age Programs.
By Cheryl Johnson, Special Education Unit, Colorado Department of Education. http://www.handsandvoices.org/pdf/trans_cheryl.pdf

Advocacy and Special Education Law Support: www.wrightslaw.com

Communication Considerations A to ZTM is a series from Hands & Voices that's designed to help families and the professionals working with them access information and further resources to assist them in raising and educating children who are deaf or hard of hearing. We've recruited some of the best in the business to share their insights on the many diverse considerations that play into communication modes & methods, and so many other variables that are part of informed decision making. We hope you find the time to read them all!

PARENTING A CHILD WHO IS DEAF OR HARD OF HEARING

All children need three types of inner resources if they are to become self- disciplining people:

- Good feelings about themselves and others.
- An understanding of right and wrong.
- A fund of alternatives for solving problems.

Twelve Strategies for Enhancing the Parent/Child Relationship and Raising Children Who Will be Self-Disciplined and Responsible Adults:

1. **Express Love.**

Expressions of love can head off undesirable behavior. When a child feels loved, she wants to please her parents. A warm facial expression, a kind tone, a look of admiration and enthusiasm, a hug, all express love in an unmistakable way. Older children, who may be embarrassed by physical expressions, welcome the personal attention of a one-on-one game or special time with mom or dad.

2. **Be Predictable.**

Children thrive in a predictable environment. Learning occurs through repetition. Routines and schedules carried out with consistency provide stability and security. This is also true with parenting behavior -- consistent messages delivered by repeating the same words and consistent, reasonable consequences result in a child who trusts his parents. And it can be especially important for some deaf or hard of hearing children who have limited communication skills.

3. **Communicate Clearly.**

Make sure your words and actions are sending the same message. Young children need to have things spelled out for them -- to teach an abstract concept like “sharing" use examples.

If there is a communication challenge because of deafness or hearing loss, acknowledge the need to purpose- fully develop strategies to close the gap. With a deaf or hard of hearing child, consider creating a 'quality control' test to make sure your message was understood as intended, including consequences. Have her repeat back what she understood you to say. Role-play to teach productive, appropriate questioning techniques that will be essential at home, at school, and everywhere.

4. Understand Problem Behavior

By being good observers, parents can gather information that will help them understand what a child's problem behavior means. Look for a pattern. What happens before the behavior starts?

When, where, and with whom does it occur? Is there a physical cause such as hunger or fatigue? Was the communication experience unsuccessful -- resulting in frustration, anger and lashing out? Does he feel threatened, hurried or ignored? Is the child seeking attention in an unappealing way? Is he having trouble expressing himself and projecting his negative energy in a physical way? Which is needed... punishment, or a shoulder to cry on?

5. Catch Your Child Being "Good."

It's easy to take for granted what we approve of, and hard to ignore what we don't like. This makes it easy to neglect opportunities to praise good behavior and focus on bad behavior. Let your child feel and see your approval. Turn 'no' statements into 'yes' statements, i.e. "I love how careful you're being with that antique vase."

6. Set Up a Safe Environment.

Children love to explore and thrive in tactile environments where things can be pulled on, climbed over, taken apart and put back together again (maybe). This isn't being naughty -- this is their nature. Make her environment safe. The more there are appropriate things available to explore the fewer problems with inappropriate behavior she will have. Consider how this applies to adolescents and even teenagers. A safe environment is one where the rules and limits are defined and understood. Can she have the car Friday night? Yes, if we know whom she's with, where she's going, and when she'll be back.

7. Set Sensible Limits.

Neither parents nor children want to live in a police-state atmosphere in which there are so many rules it's impossible to avoid breaking them. Generally, very young children can remember only a few rules and a great deal of adult supervision is required to enforce them. Make the language simple and direct, like: "Use words, No hitting."

The limits expand as the child grows older. Going outside established limits is an exercise in trust between parent and child. If your adolescent or teenager demonstrates responsible behavior, he should be rewarded with certain privileges. If he demonstrates a lack of responsibility, the limits may need to be more tightly drawn and defined until trust is built again.

8. Defuse Explosion.

Step in while your child is still calm enough to discuss a problem. Intervene before anger gets out of control. If certain situations are recipes for disaster, talk about them ahead of time and create some plans for coping and resolving. For deaf and hard of hearing kids, not being understood because of a communication mode difference or gap is a common occurrence, and one that lends itself to frustration and anger. Anticipate these kinds of circumstances. Often parents can help children avoid a meltdown with by pointing out problem-solving alternatives that can be employed before the problem rises to a crisis state.

9. Teach Good Problem Solving Skills.

There are good solutions to problems, and not-so-good solutions to problems. How do you get your child to know the difference? Start by clearly labeling unacceptable behavior and explain why. Follow up with positive suggestions for what to do next time. For children under four, it’s best to simply state what you want them to do next time. For older kids who can express themselves and think abstractly, ask them what they could do next time that would be better. Suggest additional alternatives. As kids get older and mature, they'll be able to employ these tactics more successfully if they've been practicing them since childhood.

If the problem stems from communication gaps, which is often true for children with deafness or hearing loss, use the same strategies and exploit every opportunity to expand the child's language base around conflict resolution. Knowing how to express himself and state his position will increase your child's sense of empowerment to successfully solve problem

10. Don’t Overreact.

Giving lots of attention to problem behavior can create another whole set of problems. Telling a child to go to a time-out place or removing her from the play area where she misbehaved delivers a consequence for bad behavior without creating an attention-getting incentive to do the thing again.

11. Seek Professional Help When Needed.

Most children grow out of common behavioral problems with the patient guidance of parents and other caring adults. But for a small percentage (5 to 15%) the problem behaviors persist and can become severe. Professional help is an excellent resource that can provide support and a constructive plan of action.

12. Be Patient with Your Child and Yourself.

Misbehavior happens. It's human nature to learn from our mistakes. And a key to the healthy psychological development lies in the child's ability to do just that. If you follow all 11 steps faithfully and still experience a re- peat of bad behaviors, remind yourself that your child is in a learning process called childhood. Your consistency, patience and love will provide him or her with the support needed to emerge into mature, autonomous adulthood

**Adapted and excerpted by Leeanne Seaver from Thelma Harms Ph.D., University of North Carolina, Chapel Hill*

IFSP/ IEP RESOURCES

Information is organized by:

- **Individual Family Service Plan (IFSP)**
- **Individual Educational Program (IEP)**

Individual Family Service Plan - IFSP Resources
Clerc Center – Info to Go http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Help_for_Babies_(0_to_3).html http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Laws.html
Wright's Law http://www.wrightslaw.com/ http://www.wrightslaw.com/info/ei.index.htm http://www.wrightslaw.com/info/safgd.index.htm
My Baby's Hearing (Boys Town National Research Hospital) http://www.babyhearing.org/LanguageLearning/EarlyIntervention/index.asp http://www.babyhearing.org/LanguageLearning/SupportTeam/school.asp http://www.babyhearing.org/LanguageLearning/Decisions/index.asp
Support and Training for Exceptional Parents (S.T.E.P.) http://www.tnstep.org
State of TN www.tn.gov/education/speced/doc/se**ifsp**.doc http://www.tn.gov/sos/rules/0520/0520-01/0520-01-10.pdf (official rules)

Individual Education Plan - IEP Resources
Clerc Center – Info to Go http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Educate_Children_(3_to_21).html http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Laws.html
Wright's Law http://www.wrightslaw.com/info/iep.index.htm http://www.wrightslaw.com/info/safgd.index.htm
My Baby's Hearing (Boys Town National Research Hospital) http://www.babyhearing.org/LanguageLearning/GettingReady/index.asp
Support and Training for Exceptional Parents (S.T.E.P.) http://www.tnstep.org
State of TN www.tn.gov/education/speced/doc/seiep.doc http://www.tn.gov/sos/rules/0520/0520-01/0520-01-10.pdf (official rules)

STATE AND NATIONAL RESOURCES

Information is organized by:

- **State of Tennessee**
- **United States of America**

Tennessee Resources Information for Families about Hearing Impairment in Children, parenting, and communication options.
Tennessee School for the Deaf (TSD) Knoxville (865) 579-2500 Carol Robbins (865) 579-2507 / robbinc@tsd.k12.tn.us Jackson (731) 423-5705 www.tsdeaf.org
Family Voices (English / Spanish) 1 (888) 643-7811 familyvoices@tndisability.org www.tndisability.org/familyvoices
Tennessee Hands & Voices www.tnhandsandvoices.org
University of TN – Center on Deafness 1 - 800 – 342 - 3262 www.centerondeafness.utk.edu/newborn

Library Services www.tndeaflibrary.nashville.gov
Sibshops 1 – 865 – 579 - 2429 http://www.tsdeaf.org

National Resources Information for Families about Hearing Impairment in Children, parenting, and communication options.
Boys Town National Research Hospital (English / Spanish) www.babyhearing.org
Beginnings: For parents of children who are deaf or hard of hearing, Inc. (English / Spanish) www.ncbegin.org
The Children's Hospital of Philadelphia (English / Spanish) www.raisingdeafkids.org
A. G. Bell Association for the Deaf and Hard of Hearing http://www.listeningandspokenlanguage.org/Landing.aspx?id=549 www.agbell.org
American Society for Deaf Children www.deafchildren.org
Hands & Voices www.handsandvoices.org
National Institute on Deafness and Other Communication Disorders www.nidcd.nih.gov/health/hearing
National Center for Hearing Assessment and Management (NCHAM) / Early Hearing Detection and Intervention (EHDI) http://www.infanthearing.org/
Laurent Clerc Center http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Hearing_Loss_Information.html
Communicate with Your Child (brochure) http://www.communicatewithyourchild.org/brochures/cwyc_english.pdf
Centers for Disease Control and Prevention: Early Hearing Detection and Intervention (CDC/EHDI) – Hearing Loss in Children: What Should You Know? www.cdc.gov/ncbddd/ehdi/CDROM http://www.cdc.gov/ncbddd/hearingloss/index.html

Tennessee Resources **Information about Hearing Impairment - All Ages**
Library Services for the Deaf and Hard of Hearing 1 - 800 - 3423262 www.tndeaflibrary.nashville.gov
Tennessee Disability Pathfinder (English / Spanish) 1-800-640-4636 tnpathfinder@vanderbilt.edu www.familypathfinder.org
Tennessee School for the Deaf 1 – 865 - 594-6022 http://tsdeaf.org/
Vocational Rehabilitation Telephone: (615) 313-4891 http://tennessee.gov/humanserv/rehab/vrs.html
Tennessee Department of Education http://www.tn.gov/education http://www.tn.gov/education/speced/doc/71309DandHI.pdf (official guidelines / definitions) http://www.tn.gov/education/parents.shtml

National Resources **Information about Hearing Impairment - All Ages**
U.S. Department of Education: Opening Doors publication (available in mulitple formats / languages) www.edpubs.org 1-877-433-7827
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.clerccenter.gallaudet.edu/infotogo http://www.gallaudet.edu/clerc_center/information_and_resources/info_to_go.html
A.G. Bell 1 – 866 – 337 - 5220 www.agbell.org
Hands & Voices 1 - 866 - 422-0422 www.handsandvoices.org
Let Them Hear Foundation Advocacy Program 1 - 877 - 432-7435 www.deafspecialeducation.com

Tennessee Resources **Information about and educational services for 0 – 3 children with hearing impairment.**
Tennessee Newborn Hearing Screening Program (615) 262-6160 http://health.state.tn.us/NBS/hearing.htm
TN Department of Early Learning: TN Early Intervention System (TEIS) http://www.tn.gov/education/teis/parent_info.shtml http://www.tn.gov/education/teis/index.shtml
Tennessee School for the Deaf 1 – 865 - 594-6022 http://tsdeaf.org/
Support and Training for Exceptional Parents (S.T.E.P.) http://www.tnstep.org
Vanderbilt Bill Wilkerson Center, National Center for Childhood Deafness and Family Communication (NCCDFC) http://www.mc.vanderbilt.edu/nccdfc
Tennessee Hands & Voices www.tnhandsandvoices.org

National Resources **Information about and educational services for 0 – 3 children with hearing impairment.**
National Early Childhood Technical Assistance Center (NECTAC) http://www.nectac.org/partc/statepolicies.asp?text=1 1 – 919 – 962 - 2001
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Help_for_Babies_(0_to_3).html
National Dissemination Center for Children with Disabilities (NICHCY) http://www.nichcy.org/babies 1 – 800 – 695 - 0285
The Children's Hospital of Philadelphia (English / Spanish) www.raisingdeafkids.org/communicating/choices
John Tracy Clinic www.jtc.org 1 – 800 – 522 - 4582
National Cued Speech Association www.cuedspeech.org 1 – 800 – 459 - 3529
Let Them Hear Foundation Advocacy Program 1 – 877 – 432 – 7435 http://www.deafspecialeducation.com
Boys Town National Research Hospital (English / Spanish) www.babyhearing.org
Beginnings: For parents of children who are deaf or hard of hearing, Inc. (English / Spanish) www.ncbegin.org
The Children's Hospital of Philadelphia (English / Spanish)

www.raisingdeafkids.org
A. G. Bell Association for the Deaf and Hard of Hearing http://www.listeningandspokenlanguage.org/Landing.aspx?id=549 www.agbell.org
American Society for Deaf Children www.deafchildren.org
Hands & Voices www.handsandvoices.org
National Institute on Deafness and Other Communication Disorders www.nidcd.nih.gov/health/hearing
National Center for Hearing Assessment and Management (NCHAM) / Early Hearing Detection and Intervention (EHDI) http://www.infanthearing.org/
Laurent Clerc Center http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Hearing_Loss_Information.html
Communicate with Your Child (brochure) http://www.communicatewithyourchild.org/brochures/cwyc_english.pdf
Centers for Disease Control and Prevention: Early Hearing Detection and Intervention (CDC/EHDI) – Hearing Loss in Children: What Should You Know? www.cdc.gov/ncbddd/ehdi/CDROM http://www.cdc.gov/ncbddd/hearingloss/index.html

Tennessee Resources **Information about and educational services for 3 - 5 children with hearing impairment.**
Tennessee Hands & Voices www.tnhandsandvoices.org
Tennessee Department of Education http://www.tn.gov/education http://www.tn.gov/education/speced/doc/71309DandHI.pdf (official guidelines / definitions) http://www.tn.gov/education/parents.shtml
Tennessee School for the Deaf 1 – 865 - 594-6022 http://tsdeaf.org/
Support and Training for Exceptional Parents (S.T.E.P.) http://www.tnstep.org

National Resources **Information about and educational services for 3 - 5 children with hearing impairment.**
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Educate_Children_(3_to_21).html
Kendall Demonstration School for the Deaf (Pre-K – 8th) @ Gallaudet College 1 – 866 – 782 - 1556 http://www.gallaudet.edu/KDES/About_.html
The National Agenda: Core Curriculum for the Deaf http://www.ndepnow.org/pdfs/national_agenda.pdf
Boys Town National Research Hospital (English / Spanish) www.babyhearing.org
Beginnings: For parents of children who are deaf or hard of hearing, Inc. (English / Spanish) www.ncbegin.org
The Children’s Hospital of Philadelphia (English / Spanish) www.raisingdeafkids.org
A. G. Bell Association for the Deaf and Hard of Hearing http://www.listeningandspokenlanguage.org/Landing.aspx?id=549 www.agbell.org
American Society for Deaf Children www.deafchildren.org
Hands & Voices www.handsandvoices.org
National Institute on Deafness and Other Communication Disorders www.nidcd.nih.gov/health/hearing
National Center for Hearing Assessment and Management (NCHAM) / Early Hearing Dection and Intervention (EHDI) http://www.infanthearing.org/
Laurent Clerc Center http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Hearing_Loss_Information.html
Communicate with Your Child (brochure) http://www.communicatewithyourchild.org/brochures/cwyc_english.pdf
Centers for Disease Control and Prevention: Early Hearing Detection and Intervention (CDC/EHDI) – Hearing Loss in Children: What Should You Know? www.cdc.gov/ncbddd/ehdi/CDROM http://www.cdc.gov/ncbddd/hearingloss/index.html

Tennessee Resources **Information about and educational services for school ages K – 12 with hearing impairment.**
Tennessee School for the Deaf 1 – 865 - 594-6022 http://tsdeaf.org/
Tennessee Department of Education http://www.tn.gov/education http://www.tn.gov/education/speced/doc/71309DandHI.pdf (official guidelines / definitions) http://www.tn.gov/education/parents.shtml http://www.tn.gov/education/speced/ http://www.tn.gov/education/speced/tools.shtml (IEP)
Support and Training for Exceptional Parents (S.T.E.P.) http://www.tnstep.org
Tennessee Hands & Voices www.tnhandsandvoices.org
STARS: Services for Students Who Are Deaf and Hard of Hearing http://starsnashville.org/programs/deaf-hard-of-hearing-prevention/

National Resources **Information about and educational services for school ages K – 12 with hearing impairment.**
The National Agenda: Core Curriculum for the Deaf http://www.ndepnow.org/pdfs/national_agenda.pdf
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go
Model Secondary School for the Deaf (9th – 12th)@ Gallaudet College 1 – 866 – 782 - 1556 http://www.gallaudet.edu/mssd.html
Kendall Demonstration School for the Deaf (Pre-K – 8th) @ Gallaudet College 1 – 866 – 782 - 1556 http://www.gallaudet.edu/KDES/About_.html
Lexington School for the Deaf http://www.lexnyc.com/
Clarke School for the Deaf http://www.clarkeschools.org/

Tennessee Resources **Information About and Educational Services for Post-Secondary Ages**
Postsecondary Education Consortium – UT-K 1 - 865 - 974-0607 http://www.sunsite.utk.edu/cod/staff.html
STARS: Services for Students Who Are Deaf and Hard of Hearing http://starsnashville.org/programs/deaf-hard-of-hearing-prevention/
TN Council for the Deaf and Hard of Hearing http://tennessee.gov/humanserv/rehab/cc6.html 1 – 800 – 270 - 1349
Rehabilitation Services 1 – 800 – 270 - 1349 http://www.tn.gov/humanserv/rehab/dhhs.html
Secondary Transition Project, The Arc Tennessee 1 - 800 - 835-7077 www.thearctn.org/Transitions.php
TN Rehabilitation Center http://www.tennessee.gov/humanserv/rehab/rehab_main.html
TN Regulatory Authority (TDAP) 1 - 800-342-8359 ext. 179 http://www.state.tn.us/tra/consumerfiles/tdapform.pdf

National Resources **Information About and Educational Services for Post-Secondary Ages**
National Center on Deafness 1 – 818 – 677 - 2054 ncod@csun.edu http://www.csun.edu/ncod/
Gallaudet University http://www.gallaudet.edu/
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.gallaudet.edu/clerc_center.html
PEPNet2 http://www.pepnet.org/

Tennessee Resources **Information About and Services for Young Adults**
TN Council for the Deaf and Hard of Hearing http://tennessee.gov/humanserv/rehab/cc6.html 1 – 800 – 270 - 1349
Rehabilitation Services 1 – 800 – 270 - 1349 http://www.tn.gov/humanserv/rehab/dhhs.html
Secondary Transition Project, The Arc Tennessee 1 - 800 - 835-7077 www.thearctn.org/Transitions.php
TN Rehabilitation Center http://www.tennessee.gov/humanserv/rehab/rehab_main.html
TN Regulatory Authority (TDAP) 1 - 800-342-8359 ext. 179 http://www.state.tn.us/tra/consumerfiles/tdapform.pdf

National Resources **Information About and Services for Young Adults**
Laurent Clerc National Deaf Education Center 1 - 202 - 651-5051 http://www.gallaudet.edu/Clerc_Center/Information_and_Resources/Info_to_Go/Transition_to_Adulthood.html
Disability.gov: Connecting People to Resources Nation Wide https://www.disability.gov/
Telecommunications Equipment Distribution Program Association http://www.tedpa.org/

Tennessee Resources **Information About and Educational Services for Individuals with Deafness Plus**
Tennessee Technology Access Center (TAC) http://tac.ataccess.org
Tennessee Technical Assistance and Resources for Enhancing Deaf-Blind Supports (Project TREDS) * Resource Packet 1 – 800 – 288 - 2266 http://www.vanderbilt.edu/kennedy/treds/
ARC of Middle TN http://www.thearctn.org/
TN Disability Coalition 1 – 615 – 383 - 9442 http://www.tndisability.org/
TN Department of Human Services - Disability 1 – 615 – 313 - 4700 http://www.state.tn.us/humanserv/Disability.html

National Resources **Information About and Educational Services for Individuals with Deafness Plus**
United Cerebral Palsy http://www.ucp.org
Disabled Children's Relief Fund (DCRF) http://www.dcrf.com
Disability Resources Monthly Guide to Disabilities on the Internet http://www.disabilityresources.org/index.html
National Family Association for DeafBlind http://www.nfadb.org/
Deaf-Blindness Resource, Technology Assistance, Training http://nationaldb.org/
Helen Keller National Center for DeafBlind Youths and Adults http://www.hknc.org/

Tennessee Resources **Funding and Other Services**
TennCare http://www.tn.gov/tenncare/tenndercare/index.shtml
Child Care Resource and Referral http://www.tnccrr.org/
Children’s Special Services (CSS) TN Dept. of Health http://health.state.tn.us/mch/css.htm
Graceful Sounds http://www.gracefulsounds.org
Friends of Tennessee Babies with Special Needs 1 – 856 – 789 – 2409 http://www.fotbabies.org

National Resources **Funding and Other Services**
ARCH National Resource Center for Respite and Crisis Care Services 1-888-671-2594 http://archrespite.org/
A.G. Bell Association: Financial Aid & Scholarship Awards www.agbell.org 1 - 866- 337 - 5220
United Healthcare Children’s Foundation (UHCCF) http://www.unccf.org
Disabled Children’s Relief Fund http://www.dcrf.com
Lions Clubs http://www.lionsclubs.org
Sertoma Club http://www.sertoma.org
Hear Now (Starkey) http://www.sotheworldmayhear.org
HIKE Fund http://www.thehikefund.org
Colorado Neurological Institute http://www.thecni.org/hearing/assistance
Oticon Pedicatrics Hearing Aid Loaner Bank (Starkey) 1 – 888 – 684 – 7331 http://www.oticonusa.com/Oticon/Professionals/Pediatrics/National_Loaner_Bank.html.
American Speech and Hearing Association (ASHA) http://www.asha.org/familyfunding

LIBRARY RESOURCES

BOOKS

American Sign Language Dictionary: Sternberg M.L.A. New York: Harper and Row.

A Child Sacrificed to the Deaf Culture: By Tom Bertling. Wilsonville, Or: Kodiak Media Group, (1994)

Balancing Act: By Virginia M Scott. Butte Publications, Inc., (1997)

The Book of Choice: Support for Parenting a Child Who Is Deaf or Hard of Hearing Edited by Leeanne Seaver (2010) http://handsandvoices.org/resources/products.htm

Choices in Deafness: A Parent's Guide. A collection of family stories about their deaf child and the communication method they use. Edited by Sue Schwartz, Ph.D. Woodbine House, 2006

Come Sign with Us: Sigh Language Activities for Children. By Jan C. Hafer and Robert M. Wilson. Illustrated by Paul Setzer. 1998)

Cochlear Implants in Children: Ethics and Choices. John B. Christianson and Irene W. Geigh Washington, D.C.: Gallaudet University Press, 2002. Covers the ongoing controversy about implanting cochlear hearing devices in children. Describes findings from a survey and follow up interviews with parents of children who have implants.

Cochlear Implantation for Infants and Children: advances/senior editor, Graeme M. Clark: editors, Robert S.C. Cowan, Richard C. Dowell. Published by San Diego: Singular Pub. Group, (1997)

The Comprehensive Signed English Dictionary: Harry Bornstein, Karen L. Saulnier, and Lillian B. Hamilton, Edi- tors

Deaf History Unveiled: Sixteen essays offer the current results of Harlan Lane, Renate Fischer, Margret Winzer, William McCagg, and 12 other noted historians in this field. John Vickrey Van Cleve, Editor

Deaf Plus: A Multicultural Perspective K.M. Christensen, Ed. Berkeley, CA: DawnSignPress, 2000 Eleven essays with information for teachers, administrators, psychologists, social workers, and families with deaf children about the multilingual and multicultural dimensions of the Deaf Community, including education/social needs of deaf children with Spanish-speaking heritage.

Deaf President Now: The 1988 Revolution at Gallaudet University. John B. Christiansen and Sharon N. Barnartt

Facilitating Hearing and Listening in Young Children Carol Flexer, 2nd edition, San Diego, A:: Singular Publish- ing Group, 1999; Emphasizes the need to create an "auditory world" Information on many facets of hearing loss, amplification technology, cochlear implants, federal laws and listening strategies.

The Feel of Silence: A compelling memoir about a lawyer and professor with a profound hearing loss surviving the trials of accommodating the hearing world, by Bonnie Poitras Tucker, J.D. Temple University Press, (1996)

From Emotions to Advocacy: The Special Education Survival Guide Pam Wright and Pete Wright Harbor House Law Press, Inc. Hartfield, VA 23071 www.wrightslaw.com

Foundations of Bilingual Education and Bilingualism: Baker, C. (1996) Clevedon: Multilingual Matters

Good Morning Me! Eberlein, L., Stelford Publishing, Denver, (2006) Introduces your child to initial vowel/conso- nant combinations through entertaining repetition; www.soundsgreatseries.com

How the Student with Hearing Loss Can Succeed in College: A handbook for Students, Families and Professionals. Edited by Carol Flexer, Ph.D., Denise Wray, h.D., and Ron Leavitt, M.S. Foreword by Mark Ross, Ph.D. Alexander Graham Bell Association for the Deaf, Inc., (1990)

Handtalk School: Words and sign Language depict a group of students involved in putting on a Thanksgiving play at a school for deaf children. By Mary Beth. New York: Toronto: New York: Four Winds Press; Collier Macmillan Canada; Maxwell Macmillan International, (1991)

How to Communicate with Infants before They Can Speak Garcia, Joseph(1999) www.harriscomm.com

IDEA Advocacy for Children who are Deaf or Hard of hearing: A guide for parents of children who are deaf or hard of hearing and the professional involved in their education. By Bonnie Poitras Tucker, J.D. Singular Publishing Group, (1997)

IDEA as Amended in 2004 by Rud Rutherford Turnbull, Nancy Huerta, Matthew Stowe, Publication date June,

2005

Kid-friendly Parenting with Deaf and Hard of Hearing Children: By Daria J. Medwid, Denise Chapman Weston. Washington, D.C.: Clerc books, (1995)

The Mask of Benevolence: disabling the deaf community, by Harlan Lane. New York: Knopf, (1992)

My Sense of Silence: memoirs of a childhood with deafness, by Lennard J. Davis. Urbana: University of Illinois Press, (2000)

Never the Twain Shall Meet: Bell, Gallaudet, and the Communications Debate. Richard Winefield

Not Deaf Enough: Raising a Child who is Hard of Hearing with Hugs, Humor and Imagination. Patricia Ann Mor- gan Candlish. Washington, D.C.: Alexander Graham Bell Association for the Deaf, 1996. A parent's perspective provides an overview of services for hard of hearing children.

Our Forgotten Children: Hard of Hearing Pupils in the Schools. Edited by Julia Davis, Ph.D., SHHH Publications, (2001) 3rd edition

Raising and Educating a Deaf child: by Marc Marschart. New York: Oxford University Press, (1997)

The Signing Family: what every parent should know about sign communication, by David A. Stewart. Washington, D.C.: Gallaudet University Press, (1998)

Signs for Me: Basic sign vocabulary for children, by Bahan, B., & Dannis, J. (1990) Berkeley, CA Dawn Sign Press

The Silent Garden: Ogden, P.W., & Lipsett, 5. (1982) Understanding the hearing-impaired child. New York: St. Martin Press

So your child has a hearing loss: next steps for parents. Washington, DC: AG Bell, (2000) Sounds Like Home: Growing Up Black and Deaf in the South, by Mary Hering Wright

Special Children, Challenged Parents: the struggles and rewards of raising a child with a disability, by Robert A Naseef. Secucus, N.J.: Carol Pub. Group, (1997)

What's That Pig Outdoors?: An inspiring autobiography of Henry Kisor, oral deaf book editor and columnist for the Chicago Sun Times. Henry Kisor, (1990)

When Bad Things Happen to Good People: Kushner, H. (1981) New York: Avon Books

When the Mind Hears: by Harlan Lane. A history of the Deaf, presenting the fundamental issues and controversies confronting deaf people

When your Child is Deaf: David M. Luterman with audiologist Mark Ross, who is hard of hearing from New York Press

Wrightslaw: Special Education Law Peter W.D. Wright and Pamela Darr Wright Harbor Law Press, 1st edition 1999 www.wrightslaw.com

Tennessee’s lending library of books, media programs, and assistive communication devices is one of the largest, if not THE largest in a public library in the country, with over 12,750 items in the collection. It includes materials to educate the hearing public about hearing loss and deafness as well as accessible informational and entertaining materials for people who are deaf or hard of hearing. Materials about deaf-blindness are also available. So, if you are experiencing a hearing a loss or want to learn more about any aspect relating to hearing loss "check out" our collection!

http://tndeaflibrary.nashville.gov/library

To help you select the appropriate book or media program you may...

- search the collection online (through the Nashville Public Library) or
- contact us for suggestions

All materials available for loan (books, media programs, and equipment) may be borrowed for 3-weeks.

Regardless of where you live in Tennessee you may borrow materials from the Library Services for the Deaf & Hard of Hearing collection. However, your hometown will determine the type of library card you will need. Click on *LSDHH Application* in the Help Center for more information about applications.

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 REFLEX: A protective mechanism in which the muscles in the middle ear contract in response to loud sounds.

ACQUIRED HEARING LOSS: Hearing loss, which is not present at birth. This type of hearing loss appears after birth, at any time in one's life, perhaps as a result of a disease, a condition, or an injury. The following are examples of conditions that can cause acquired hearing loss in children are: ear infections (otitis media), ototoxic drugs, meningitis, measles, encephalitis, chicken pox, influenza, mumps, head injury, noise exposure.

ADVOCACY: The role parents or guardians play in developing and monitoring their child's educational program. Advocating for your child means knowing what rights are assured you by the law and actively participating in the decision-making process to ensure that the services are delivered in line with your goals for your child’s development and education.

AIR BONE GAP: A difference between hearing responses by the earphone or speaker (air conduction) and bone vibrator (bone conduction). A gap or difference between air-conduction and bone-conduction responses indicates a conductive hearing loss due to problems in the middle ear. If not gap is present, this typically shows a sensorineural hearing loss.

AMBIENT NOISE: Background noise which competes with the main speech signal.

AMERICANS WITH DISABILITIES ACT (ADA): Public law 101-336 passed in 1990 that prohibits discrimination on the basis of disability in employment, transportation, public accommodation, state and local government and telecommunications. This is a "civil rights act" for persons with disabilities.

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 and understood.

ANVIL: The second of the three bones in the middle ear. Technically called the Incus.

AIR CONDUCTION: The transmission of sound to the inner ear through the ear canal and the middle ear. Air-conduction testing is performed by sending sounds to the ear though an earphone or speaker.

ASSISTIVE COMMUNICATION DEVICES: Devices and systems which are available to help deaf and hard of hearing people improve communication, adapt to their environment, and function in society more effectively.

ASSITIVE LISTENING DEVICE: A category of devices that are designed to help hard of hearing people function better in particular situations. Many ALDs are used in conjunction with the person's hearing aids and/or cochlear implants to improve their performance. These include amplified telephones, FM systems, infrared systems and induction loop systems.

ATRESIA: congenital absence of the ear canal opening.

AUDITORY BRAINSTEM IMPLANT (ABI): An ABI is similar to a cochlear implant, except the electrodes are implanted in the brainstem. The ABIs are used when a person has neurofibromatosis type 2 (NF2) and is at least 12 years of age. People with ABIs typically only perceive environmental sounds and do not hear speech clearly.

AUDITORY BRAINSTEM RESPONSE (ABR): A non-invasive, objective test that measures activity in the brainstem in response to an auditory stimulus. This test can indicate whether or not sound is being detected, even in an infant. The ABR is typically administered while the child is sleeping and is completely painless. This test may also be referred to as BAER. The ALGO 2 automated ABR screening device is used in many hospitals for universal newborn hearing screening.

AUDITORY NERVE: The eighth cranial nerve (VIII) that carries impulses (information) between the cochlea and the auditory pathway to the auditory cortex in the brain.

AUDITORY STEADY STATE RESPONSES (ASSR): Like the ABR, the ASSR is a measure of the brainstem's responses to particular auditory stimuli. This non-invasive, objective and painless test is also administered while the child is sleeping. The ASSR technology offers the audiologist an additional way to determine your child's hearing across different frequencies. The equipment has higher upper limits than traditional ABR equipment, thus allowing the audiologist to more accurately differentiate between severe and profound hearing loss in infants.

AUDIOGRAM: A graph on which a person's ability to hear different pitches (frequencies) at different volumes (intensities) of sound is documented. The audiogram gives a visual picture of the child's hearing loss.

AUDIOLOGICAL ASSESSMENT: A hearing test comprised of identifying audiometric thresholds, otoscopy, impedance testing, oto-acoustic emissions, speech recognition, and speech discrimination measurements, which shows the type, degree and configuration of hearing loss.

AUDIOLOGIST: A professional who evaluates hearing function, and treats/supports persons with hearing loss or balance disorders. New graduates are required to have their Doctorate in Audiology (Au.D.). Audiologists may be certified by American Speech Language Hearing Association (ASHA), American Academy of Audiology (AAA), or American Board of Audiology. Most states require licensure.

AUDITORY NEUROPATHY/DYS-SYNCHRONY (AN/AD): An auditory disorder that disrupts the synchronous activity of the hearing system. This type of sensorineural hearing loss ranges from normal to profound, can fluctuate and the effects vary widely. Typically the ABR test will be abnormal while the OAE test may be normal or show some presence of normal function in the cochlea (organ of hearing).

AUDITORY PROCESSING DISORDER (APD): a condition in which peripheral hearing is normal; however, the ability to process and understand what is heard is affected. There is significant variability of symptoms. Testing to accurately diagnose APD should be completed by an audiologist and the child should be at least 7 years of age.

AUDITORY TRAINING: The process of training auditory skills with the use of amplification (hearing aids and/or cochlear implants) in the awareness, discrimination, identification, and comprehension of sound. This service should be provided by a speech language pathologist with expertise in hearing loss.

AURAL/ORAL COMMUNICATION: A communication approach which uses spoken language skills using residual hearing, amplification and the use of lip-reading (speech reading).

AURAL HABILITATION: Treatment designed in order to understand and use spoken language. The focus is to provide speech, language and listening therapy using amplification and the individual's residual hearing.

AUDITORY VERBAL THERAPIST (AVT): The development of speech and verbal language through the maximized use of auditory potential by trained and licensed auditory/verbal therapists.

BAHA: A surgically implantable medical device for the treatment of hearing loss that works directly through bone conduction. The device can be used for bilateral conductive and mixed hearing loss as well as unilateral sensorineural hearing loss and is typically for those who do not benefit from conventional hearing aids. Two companies currently have FDA approval to surgically implant the Baha: Oticon Medical and Cochlear Americas. The device is FDA approved for children age 5 and older.

BEHIND-THE-EAR HEARING AID (BTE): A hearing aid that rests behind the ear. Sound from the aid is carried through a small tube to an earmold that fits into the ear. The BTE style aid is used often in young children as it is more cost effective to remake the earmold as the child grows rather than the actual hearing aid.

BEHAVIORAL OBSERVATION AUDIOMETRY (BOA): The testing of infants and young children is accomplished without reinforcement and the patient's responses are based on the subjective observation under a structured testing environment. This method must be accompanied by physiological measures in order to accurately diagnose hearing loss. Typically used with young children at a developmental age of birth to six months.

BILINGUAL / BICULTURAL: Belonging to both a hearing/English language culture and Deaf Community/ASL culture

BILATERAL HEARING LOSS: Hearing loss that is present in both ears. It can present with various types, degrees and configurations.

BINAURAL HEARING AIDS: Hearing aids worn on both ears.

BODY AIDS: An amplification unit that is worn on the body provides increased gain (power) and less feedback for individuals with a severe to profound hearing loss. Primarily used only in special situations where ear-level hearing aids cannot be used.

BONE CONDUCTION HEARING: Sound is delivered through the bones in the skull to directly stimulate the organ of hearing (cochlea).

BONE CONDUCTION TESTING: Testing conducted using a bone oscillator to determine the type of hearing loss. The bone oscillator is typically placed on the mastoid bone behind the ear and directly stimulates the cochlea (organ of hearing) through the bones in the skull and bypasses the middle ear.

BONE CONDUCTION HEARING AID: This type of hearing aid is reserved for conductive or mixed bilateral hearing loss in situations where traditional amplification cannot be used due to a small (stenosis), absent ear canal (atresia) or chronic middle ear pathology with excessive drainage. A hearing aid microphone is wired directly to a bone oscillator (receiver) and placed on the mastoid bone to directly stimulate the organ of hearing (cochlea).

CERUMEN: The medical term for earwax. It secreted from the glands in the ear canal and protects it from infection.

CHOLESTEATOMA: A non-cancerous tumor where skin cells grow uncontrolled (usually through a hole in the eardrum) and accumulates in the middle ear. It may also be the result of chronic otitis media and have a strong distinct odor. A cholesteatoma damages the middle ear and surrounding structures and needs to be surgically removed.

CHRONOLOGICAL AGE/ADJUSTED AGE: Chronological age refers to the age of an individual as measured from birth to a given date. It is used when comparing 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 is the age of the baby based on his due date. Healthcare providers may use this age when they evaluate the baby's growth and development. So, if a baby is 6 months old, but was born two months early, his adjusted age is 4 months

COCHLEA: The auditory portion of the inner ear consisting of fluid-filled channels containing the hair cells. The cochlea is shaped like a small snail shell and normally consists of two and a half turns. The cochlea converts incoming sound waves from the middle ear into electrical signals and transmits these signals to the auditory nerve.

COCHLEAR IMPLANT: A cochlear implant is an electronic device that is surgically implanted in the cochlea of the inner ear. It transmits auditory information directly to the brain, by-passing damaged or absent auditory nerves. Typically, cochlear implant users have severe to profound hearing losses and do not get much benefit from hearing aids. Successful CI users gain useful hearing and improved communication abilities with consistent use of the device and therapy. The FDA has approved CIs for children who are profoundly deaf at age 12 months, and for those with severe hearing loss at age 24 months. Adults with a moderate to profound hearing loss can receive a cochlear implant as well. Presently, there are 3 manufacturers that are FDA approved to implant this device: Advanced Bionics, Cochlear Americas, and Med El.

COGNITION: The ability to think, learn and remember.

CONDITIONED PLAY AUDIOMETRY (CPA): The testing of young children is accomplished by conditioning the child to respond to sound using with small toys. Blocks, rings, pegs and puzzles can be used to obtain a reliable audiogram. Typically used with young children at a developmental age of 2 to 5 years.

CONDUCTIVE HEARING LOSS: Conductive hearing loss occurs when sound is not conducted efficiently through the outer ear canal to the eardrum and the tiny bones (ossicles) of the middle ear. This type of hearing loss can often be corrected medically or surgically and is often associated with otitis media. Some children may have permanent conductive hearing loss due to structural abnormalities. Hearing aids or the surgically implanted Baha device are needed in many cases to give children access to sound.

CONGENITAL HEARING LOSS: Hearing loss, which is present at birth. It can include hereditary hearing loss or hearing loss due to

CONNEXIN 26: Connexin 26 (Cx26) is a protein found on the (GJB2) gene and is the most common cause of congenital sensorineural Hearing loss. Connexin 26 mutations are responsible for at least 20% of all genetic hearing loss and 10% of all childhood hearing loss. In some ethnic populations, more than 80 percent of cases of nonsyndromic recessive deafness result from a mutated Connexin 26 gene. Children born with bilateral (both ears) severe to profound sensorineural hearing losses are typically referred for genetic testing for Connexin 26 mutations.

CUED SPEECH: A communication system used with and among deaf or hard of hearing people. It is a phonemic-based system that makes traditionally spoken languages accessible by using a small number of hand shapes (representing consonants) in different locations near the mouth (representing vowels). Cued speech can be used as a supplement to lip reading. It is now used with people with a variety of language, speech, communication and learning needs.

DEAFNESS: Deafness is the complete loss of the ability to hear from one or both ears. Deafness may be inherited, caused by complications at birth, certain infectious diseases, use of ototoxic drugs, and exposure to excessive noise.

DEAF COMMUNITY: A group of deaf people who share common interests and a common heritage. 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. American Sign Language (ASL) is the mode of communication. 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: is a social, communal, and creative force for Deaf people based on American Sign Language (ASL). It encompasses communication, social protocol, art, entertainment, recreation (e.g., sports, travel, and Deaf clubs), and worship. It's also an attitude.

DEAF BLINDNESS: a person who has some degree of loss in both vision and hearing. The amount of loss in either vision or hearing will vary from person to person.

DECIBEL: (dB): The unit of measurement for the intensity (loudness) of a sound. The higher the dB, the louder the sound and the worse the hearing loss. Audiologists measure hearing from 0-120 dB and record on the audiogram.

DESIRED SENSATION LEVEL (DSL): A hearing aid verification method designed specifically for children.

DYNAMIC RANGE: The range of loudness between the softest sound that a person can hear and the loudest sound they can tolerate (UCL).

EARLY INTERVENTIONIST: A professional who specializes to help a child immediately after detection. Time is of the essence because a child's brain is programmed to learn language during the first 6 years of life—the first 3 years being the most critical. After this period, it is very difficult to acquire language and speech skills. The early interventionist provides support for parents, and teaching parents how to stimulate speech and language in their child.

EARMOLD: A custom made earpiece which fits into the outer ear to connect with a behind the ear hearing aid. Earmolds can be made of hard (acrylic) or soft (vinyl or silicone) materials. The softer materials are more often used in young children. Earmolds come in a variety of colors.

EDUCATIONAL INTERPRETER: A person who is able to train to interpret together with special skills for working in the educational environment.

ENT (Ear, Nose and Throat): A medical doctor, who specializes in the ears, nose and throat. Sometimes referred to as an otolaryngologist or otologist. Medical clearance for amplification for children should be obtained by an ENT

EUSTACHIAN TUBE: The small tube connecting the back of the throat to the middle ear that allows air into the middle ear and allows naturally-occurring fluid to drain from the middle ear. During yawning and swallowing it temporarily opens to supply air to the middle ear and to equalize the pressure in the middle ear to that of the outside atmospheric air pressure.

FEEDBACK: A high-pitched whistle sound or squeal that is heard when sound is re-amplified through the hearing aid microphone. Feedback is normal when covering the child’s hearing aid or when the hearing aid is in close contact with something.

FINGERSPELLING: Finger spelling is a standardized series of hand shapes that correspond to a letter in the alphabet to form word. Each letter has its own particular shape. Usually it is used when there is no sign for a particular word. Fingerspelling is an essential component of sign language communication.

FM SYSTEM (Frequency Modulation System): A wireless assistive listening device that picks up a speaker's voice through a microphone and transmits it, using radio waves, to a person wearing a corresponding FM receiver. The device effectively moves the speaker's mouth right up to the hard of hearing person's ears thus removing background noise and distance problems. Personal and soundfield FM systems are available.

FREQUENCY: The number of cycles per second of a sound. Frequency, expressed in Hertz (Hz), determines the pitch of the sound.

FUNCTIONAL HEARING LOSS: A hearing loss that is not caused by any specific physiological condition. In other words it is a "psychological" hearing loss, because the anatomy and physiology of the hearing system is intact.

GAIN: The range that describes how well the amplification is performing. For example, a child with unaided hearing at 70 dB who, when amplified, hears at 30dB, is experiencing a gain of 40 dB.

GENETIC COUNSELING: counseling and diagnosis of genetic conditions for individuals with birth defect/genetic disorders, which may involve hearing loss and genetic counseling including 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. The term preferred over "hearing impaired" by the Deaf and hard of hearing community to refer to individuals who have hearing loss, but also have and use residual hearing.

HEARING SCREENING: Audiometric testing of the ability to hear selected frequencies at intensities above normal hearing. The purpose is to identify individuals with hearing loss, with minimal time expenditure, and to refer them for further testing.

HEARING AID: An electronic device that delivers and amplifies sound to the ear.

HEARING IMPAIRMENT: A partial or total inability to hear

HEARING LOSS: The following hearing levels are typically characterized as follows:

Normal Hearing	0 dB to 15 dB
Slight Loss	16 dB to 25 dB
Mild Loss	26 dB to 40 dB
Moderate	41 dB to 55 dB
Moderate/Severe	56 dB to 70 dB
Severe Loss	71 dB to 90 dB
Profound	91 dB or more

HUGGIES: The brand name of a plastic-ringed device designed to "hug" the hearing aid to the ear. One of many options for retention for infants and toddlers.

I.D.E.I.A.: The Individuals with Disabilities Education Improvement Act, Public Law 108-446;formerly known as Public Law PL 105-17;101-476, PL 94-142 and PL 99- 457. Part C (See “Part C”) provides services to children birth to three years of age with disabilities. Part B of IDEA covers educational mandates for students age three through high school graduation or age-out of the system.

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.

INDIVIDUAL FAMILY SERVICE PLAN (IFSP): The IFSP addresses 1) The family's strengths, needs, concerns and priorities; 2) identifies support services available to meet those needs; and 3) empowers the family to meet the developmental needs of their infant or toddler with a disability. The IFSP is a written plan developed by parents or guardians with input from a multi disciplinary

team. (Reference part C.)

INDIVIDUALIZED EDUCATION PROGRAM (IEP): A team-developed, written program, which identifies therapeutic and educational goals and objectives, needed to appropriately address the educational needs of a school-aged student with a disability. An IEP for a child who is

deaf or hard of hearing must be accompanied by that child's Communication Plan, and must take into account such factors as 1) communication needs and the child's and family's preferred mode of communication 2) linguistic needs; 3) severity of hearing loss; 4) academic progress; 5) social/ emotional needs, including opportunities for peer interactions and communication; and 6) appropriate accommodations and assistive communication devices to facilitate learning; 7) opportunities for interaction with peers and adults using the child's same communication mode; 8) the proficiency of the staff delivering identified services on the IEP and opportunities for direct instruction in the child's communication mode: 9) all educational placement options, and 10) how the extra-curricular activitieswill be made communication-accessible.

INTENSITY: The loudness of a sound, measured in decibels (dB).

INTERPRETER: A person who facilitates communication between hearing and deaf or hard of hearing persons through interpretation into a signed language, or transliteration of a language into a visual and/or phonemic code by an oral interpreter, a signed language interpreter or cued speech interpreter.

INTONATION: The aspect of speech made up of changes in stress and pitch in the voice.

LISTENING AND SPOKEN LANGUAGE SPECALIST (LSLS): Listening and Spoken Language Specialists (*LSLS*™) work with infants and children who are deaf or hard of hearing and their families seeking a listening and spoken language outcome in a variety of settings: home-based intervention, public schools, independent schools, private therapy, clinical centers for the deaf and hard of hearing, audiological and cochlear implant centers.

LARGE VESTIBULAR AQUEDUCT SYNDROME (LVAS): A genetic condition where the vestibular aqueduct is larger than normal. The result is that many people with enlarged vestibular aqueducts suffer from hearing loss from head trauma or from rapid changes in pressure.

LEAST RESTRICTIVE ENVIRONMENT: A basic principle of Public Law 101-476 (IDEIA) which requires public agencies to establish procedures to ensure that to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.

MAINSTREAMING: Educational placement of students with disabilities into typical, general education classrooms, for some or all parts of the school day, based on the student’s IEP. This placement decision may be rooted in the philosophy that all children 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."

MAP: The program stored in the speech processor of a cochlear implant that tells the system how to process sound on each channel so that it is most audible and comfortable for the individual user. Each implant user's map varies considerably from every other user. Maps also change over time.

MAPPING: The process of programming a cochlear implant speech processor with various speech strategies, programming and features.

MENIERE'S DISEASE (SYNDROME): A syndrome that consists of vertigo, tinnitus, a feeling of fullness in the affected ear and a fluctuating hearing loss. It is thought to be caused by fluid imbalance in the inner ear.

MENINGITIS: A bacterial or viral inflammation that can cause auditory disorders due to infection or inflammation of the inner ear or auditory nerve.

MIDDLE EAR: An air-filled cavity, about the size of a pea, between the eardrum and inner ear containing three tiny bones (called ossicles)—malleus (hammer), incus (anvil) and stapes (stirrup)—that conduct sound from the eardrum to the inner ear via the oval window.

MIXED HEARING LOSS: A combination of both sensorineural (inner ear) and conductive (middle ear or outer ear) hearing loss. The audiogram show an air-bone gap of 15 dB or more.

MONAURAL AMPLIFICATION: The use of one hearing aid.

MORPHEME: A linguistic unit that cannot be divided into smaller meaningful parts.

MOST COMFORTABLE LOUDENSS LEVEL (MCL): The volume at which sounds are most comfortable for an individual with hearing loss.

MULTI-DISCIPLINARY ASSESSMENT AND EVALUATION: Qualified persons representing two or more disciplines or professions, i.e.; a speech therapist and an audiologist make this assessment and evaluation of the child. The child's development is evaluated to determine if there are any delays or conditions that would indicate the need for special services.

MYRINGOTOMY: A small incision made in the eardrum by a physician to equalize air pressure and/or to drain infection or fluid from the middle ear.

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.

NEUROLOGIST: A medical doctor whose specialty is problems of the peripheral and central nervous systems, and their connection to the senses.

NEUROTOLOGIST: An otologist who specializes in the nervous system related to the auditory and vestibular systems.

NEWBORN HEARING SCREENING: A program in place in many hospitals across the country that allows a child's hearing to be evaluated immediately after the baby is born. Tennessee passed "Claire's Law" in April 2008 to require newborn hearing screening; effective July 1, 2008. The law states that a child shall be screened for hearing loss prior to discharge from the birth facility or prior to one month of age."

NOISE INDUCED HEARING LOSS: A permanent hearing loss caused by exposure to loud noise. It can be caused by a single incident or exposure to noise over time.

NOTETAKER: A person who takes notes for an individual with hearing loss.

NYSTAGMUS: Involuntary movement of the eyes that may accompany vertigo.

OPEN FIT HEARING AID: An ear piece that fits more open in the ear canal and thus permit natural sounds to enter and the louder low frequency sounds from the hearing aid to escape thus preventing the distorted and muffled occlusion effect. The open fitting is reserved for older children and adults.

ORAL: An unspecific term that is sometimes used when referring to individuals with hearing loss and deafness who talk but don't necessarily use sign language. Emphasis is placed on use of residual hearing, lip reading and contextual cues to communicate using spoken language.

OTITIS: An inflammation involving some portion of the outer, middle or inner ear.

OTITIS MEDIA: A middle ear infection. Children with recurring episodes may experience fluctuating hearing loss and may be at risk for speech/ language delays. Fluid can be present with or without infection and may cause temporary hearing loss, which can evolve into permanent loss.

OTO-ACOUSTIC EMISSIONS (OAE): An objective audiological test that verifies cochlear (organ of hearing) activity, often is used in testing infants suspected of hearing loss. OAE cannot determine the type or degree of hearing loss and must be used in conjunction with other audiological tests.

OTOLOGIST: A physician who specializes in medical problems of the ear.

OTOLARYNGOLOGIST: A doctor trained to specialize in diseases of the ear, sinuses, mouth, throat, larynx and other structures of the head and neck. Commonly called an ENT (ears, nose and throat doctor).

OTORRHEA: A purulent discharge (puss) draining from the ear canal.

OTORRHAGIA: Bleeding from the ear canal. Ear hemorrhage.

OTOSCLEROSIS: A genetic condition where abnormal spongy bone grows on the tiny bones in the middle ear causing a progressive hearing loss,

OTOSCOPE: A special instrument that contains a flashlight and magnifying glass used for examining the ear.

OTOTOXIC: A chemical or drug that could potentially be harmful to the function of the auditory system.

OUTER EAR: The external ear and the ear canal. This part of the ear that collects sounds waves and directs them into the ear.

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 C: Part C is the section of Public Law PL 105-17 (I.D.E.A.) that refers to early intervention services available to eligible children from birth through two years of age and their families.

PART B: Part B is the section of Public Law PL 105-17 (I.D.E.A.) that refers to early intervention services available to eligible children aged three through twenty-one in the public schools.

PERI-LINGUAL DEAFNESS: Refers to hearing loss acquired while learning a first language.

PERILYMPHATIC FISTUA: A tear in the oval or round windows separating the middle ear from the inner ear allowing perilymph to drain into the middle ear. This can cause hearing and balance problems sometimes similar to Meniere's disease.

PERI-LINGUAL: During the period of language acquisition.

PHONEME: The smallest unit in a language that is capable of conveying a change in meaning. For example, the "m" in "mall" and the "b" in "ball." There are 41 phonemes in the English language. A phoneme may also be referred to as speech sounds.

PINNA: The external or outer ear (auricle).

PIDGIN SIGNED ENGLISH (PSE): When an individual uses American Sign Language signs for the most part, but in English word order.

POST-LINGUAL DEAFNESS: Refers to hearing loss acquired after learning a first language.

PRE-LINGUAL DEAFNESS: Refers to hearing loss, which is congenital or acquired before acquisition of language

REAL-EAR MEASUREMENT: A verification measure of the actual gain and output of the hearing aid in the ear canal. This test uses a "probe-microphone" that is placed into the ear canal along with the hearing aid and ear mold fitted in place. It assesses how effectively sound is actually being amplified by the hearing aids in the ear. It is considered a very important measurement because everyone's ear canals are shaped differently and this will effect how a hearing aid functions.

REAL EAR TO COUPLER DIFFERENCE (RECD): A measurement typically made in young children during the verification process. This measurement allows the audiologist to accurately account for the child's individual ear size when fitting hearing aids.

RECEPTIVE LANGAUGE: A child's ability to understand the language that is spoken or signed to him.

RELAY TELEPHONE SERVICES: Relay Telephone Service/Relay Network. A service which involves an operator "relaying" conversation between a TDD/TTY user (generally a person with a hearing loss and/or speech impairment) and a hearing/speaking individual using an ordinary, non-adapted phone.

RESIDUAL HEARING: The amount of hearing that remains usable when a hearing loss is present without the use of amplification.

SEMANTICS: The meaning of words and how they relate to one another.

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 manual form of communication using hand movements, gestures and facial expressions rather than spoken words. Forms of sign language are American Sign Language (ASL), signed English and Pidgin.

SIMULATED REAL EAR MEASURE (SREM): A verification measure of the actual gain and output of the hearing aid without the hearing aid in the child's ear. It assesses how effectively sound is actually being amplified by the hearing aids. An average or measured RECD is applied to this measure for the most accurate fitting.

SPEECH RECOGNITION THRESHOLD (SRT): This is the softest level at which an individual identifies 50% of the simple spoken words presented and repeats them correctly. A two-syllable word that has equal stress on both syllables is used to obtain an SRT. Some examples of spondee words include baseball, cowboy, hotdog, icecream and railroad.

SPEECH LANGUAGE PATHOLOGIST: A trained health care professional that has a Masters degree in Speech-language pathology whose professional practice includes the evaluation, rehabilitation and prevention of speech and language disorders. Speech and language delays are frequently seen in children with hearing loss. Speech Language Pathologists are typically certified by the American Speech Language Hearing Association (ASHA). Most states require licensure.

SPEECH AWARENESS THRESHOLD (SAT): This is the softest level at which an individual demonstrates the ability to detect speech with 50% accuracy.

SPEECH INTELLIGIBILITY: The degree to which an individual can to understood when speaking.

SPEECH BANANA: On an audiological graph measured in decibels and frequencies, the area wherein most conversational sounds of spoken language occur. Sometimes called the "speech banana" because of the shape this area depicts on the graph. The purpose of wearing hearing aids is to amplify sound into this zone.

SPEECHREADING: The interpretation of lip and mouth movements, facial expressions, gestures, prosodic and melodic aspects of speech, structural characteristics of language, and topical and contextual cues.

SYNTAX: The ways that words are combined to form sentence structure.

TACTILE AIDS: A type of assistive listening 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.

TEACHER OF THE DEAF:

TELECOIL: A small coil of wire in most hearing aids and cochlear implants that allows the device to pick up the magnetic fields emitted by telephones, various assistive listening devices, or induction room loops. Sometimes referred to as "t-switch" or "t-coil".

TELECOMMUNICATION DEVICES FOR THE DEAF (TDD'S): 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 regulations and legislation.

TELECAPTION (CLOSED CAPTION DECODER): An electronic device or computer chip that can display closed captions encoded in television programs or videos. Also called a telecaption adapter and designed for use by individuals who are deaf or hard of hearing. These remote captioning systems allow closed captioning to be displayed outside of the normal on-screen viewing area.

THRESHOLD: The softest sounds (speech or tones) a person can detect 50% of the time.

TINNITUS: (TIN-ih-tus or tih-NIGH-tus) A sensation of various noises in the ears. It is not a disease, but a symptom of an underlying auditory condition. It is often associated with hearing loss and exposure to loud noise.

TOTAL COMMUNICATION: A communication methodology that utilizes spoken language, sign language and the use of facial expressions/gestures.

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.

TYMPANIC MEMBRANE: The eardrum. It separates the outer ear from the middle ear as it vibrates in response to incoming sounds, which are then transmitted to the middle and inner ear.

UNILATERAL HEARING LOSS: A hearing loss that is present in one ear.

UNCOMFORTABLE LOUDNESS LEVEL (UCL): The intensity at which sounds become uncomfortably loud.

VIDEO RELAY/VIDEO PHONE: Video Relay Service (VRS) is a communication technology where an individual who is deaf can communicate with a hearing person and vice versa. This service utilizes sign language interpreters to convey messages. Special equipment is needed.

VIDEO/VISUAL REINFORCEMENT AUDIOMETRY (VRA): The testing of young children is accomplished by conditioning the child to took at a toy or video each time he or she hears a sound; typically used with young children at a developmental of age 6 months to 2 years.