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# **Building the Family Toolbox: A Deaf/Hard of Hearing Perspective**

12/6/24

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# This is a 3 part training series:

Part 2: January 10, 2025, 1:00 pm -3:00 pm, Virtual – webinar link to be provided

Part 3: February 7, 2025, 1:00 pm -3:00 pm, Virtual – webinar link to be provided

## A little bit about us:

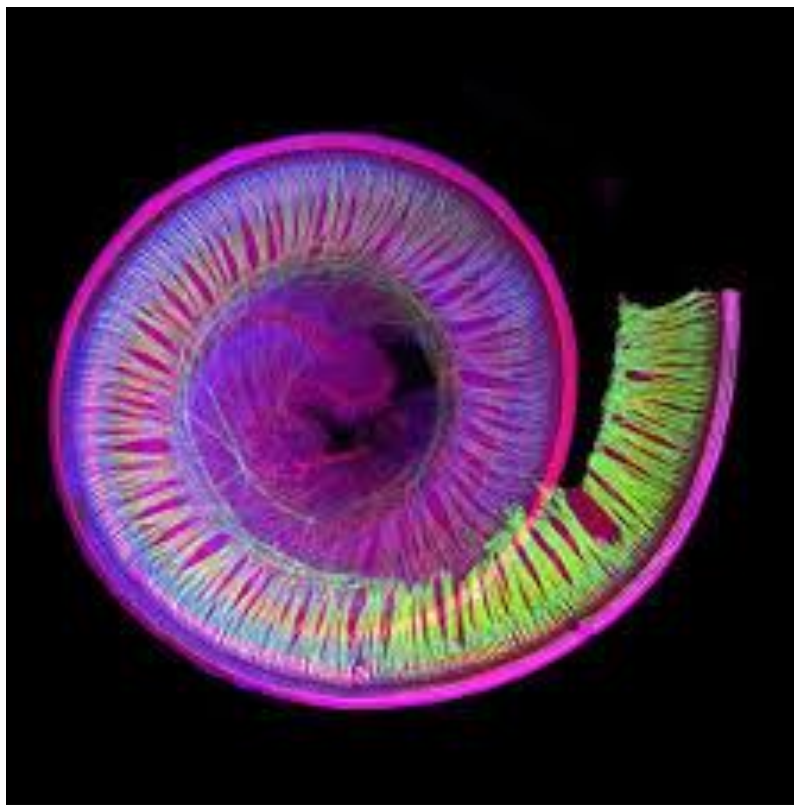
Michelle Parfitt, MA, CCC-SLP, LSLS Cert. AVEd, is a Listening and Spoken Language Specialist that has been working as a pediatric speech/language pathologist for over 20 years. She is employed as the Director of Early Intervention at DePaul School for Hearing and Speech in Pittsburgh, PA. She has presented to numerous professional and parent groups regarding listening and spoken language development strategies for children with hearing loss.

Mary Ann Stefko, M.Ed, NIC, Choices for Children/The Scranton School for Deaf and Hard of Hearing Children, earned a Master's of Education in counselor education and a Bachelor of Science degree in communication disorders from Pennsylvania State University. Her extensive experience includes 30 years teaching students preschool to high school age, in both residential and inclusive educational settings; educational interpreting; presenting and training on deafness and hearing loss to families, educators and the business communities; and teaching at the college level.

# Today's Agenda

- Introduction to Hearing Loss
- Audiology 101
- Technology Options
- Communication Options
- Communication Plan
- Building the Team
- Filling your Family Toolbox
- Supports and Resources
- Plan for Next Steps

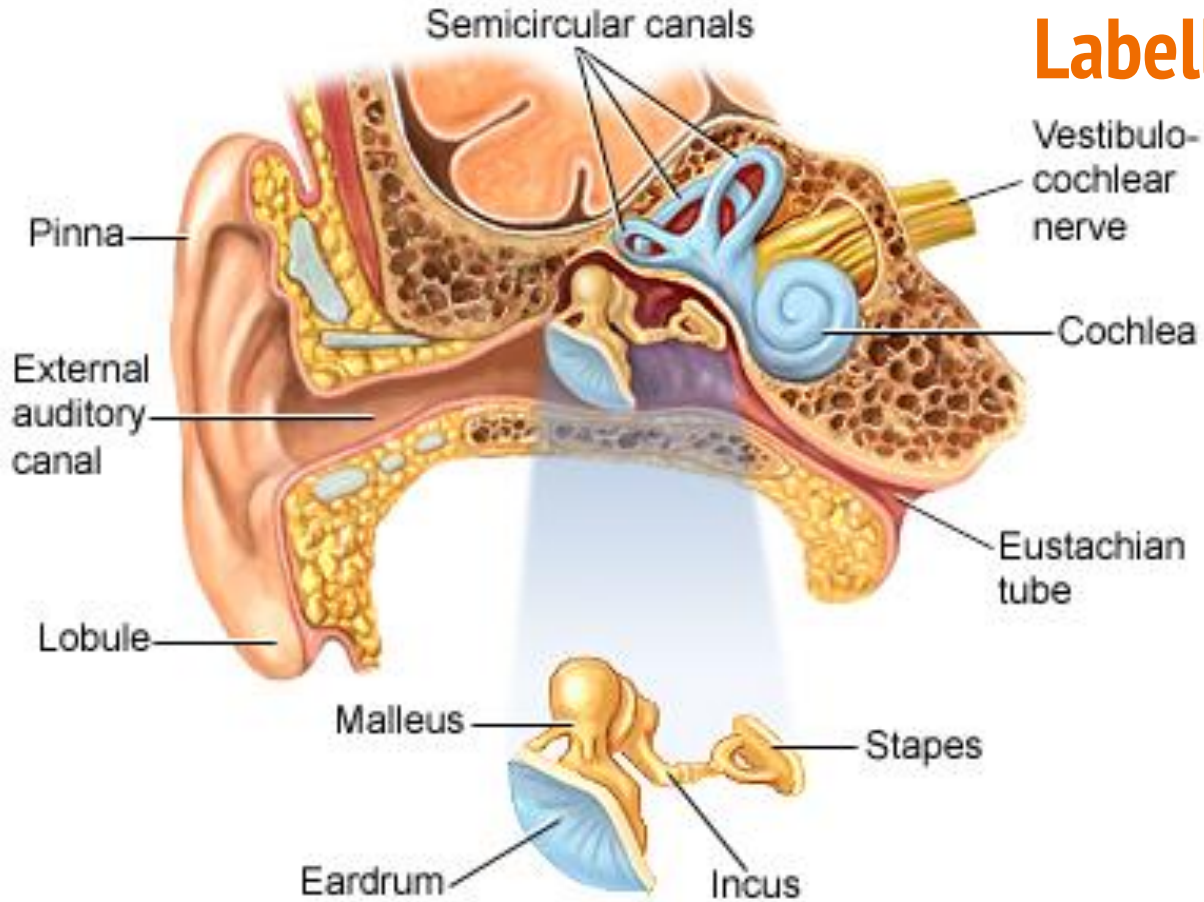
Gorgeous photo of a human cochlea, taken by scientist Ronald Pouyo, from the University of Liege, Belgium. The picture is called "Spiral of Sound."



# Types of Hearing Loss

- Conductive
- Sensorineural
- Mixed
- Central

# Labelled Parts of the Ear



<https://medlineplus.gov/ency/imagepage/s/1092.htm>

# Conductive Loss

- This type of loss takes place in the outer or middle ear
  - the sound cannot move, i.e. be conducted, through the ear
  - can produce a moderate hearing loss
  - many conductive losses are surgically correctable
- Atresia - absence of the pinna and/or external auditory meatus
  - Stenosis - narrowing of the external auditory meatus
  - Excessive cerumen (earwax) build up
  - External otitis (swimmer's ear)
  - Ruptured tympanic membrane
    - from items pushed into ear or ear infections
  - Other growths or foreign objects in canal
  - Cholesteotoma - ingrowth of skin that forms a tumor-like mass that invades the middle ear or mastoid
  - Dislocated ossicles - trauma to the head can cause a separation/fracture of the bones
  - Otosclerosis - spongy bone that grows around the footplate of the stapes fixating it in the oval window; inherited predisposition
  - Otitis media - middle ear infection that inflames the cavity or fills the middle ear with

# Sensorineural Loss

- Loss takes place in the inner ear which contains the cochlea, the sensory organ for hearing
  - there is some form of damage in the cochlea or to the hair cell nerve fibers
  - the fibers cannot transmit the electrochemical signal to the 8th nerve (Auditory) and ultimately to the brain
  - loss can be mild to profound and is permanent
- Disease - Meningitis, CMV, Measles, Rubella, Toxoplasmosis, Mastoiditis, Chicken Pox
  - Genetic - Connexin 26, Usher's Syndrome, Waardenburg Syndrome, Treacher-Collins Syndrome, CHARGE Syndrome, Mondini Syndrome
  - Other - oto-toxicity, Rh incompatibility, fistulas, noise, oxygen deprivation(hypoxia), head trauma, extended high fever



# Mixed Hearing Loss

- This occurs when there is both a conductive AND a sensorineural component in THE SAME EAR
  - For example: a child may have a ruptured eardrum from severe ear infections (conductive), but also have a fistula in the cochlea (sensorineural)
  - the severity of the loss depends upon the sensorineural component

# Central Hearing Loss

- These hearing problems occur along the Auditory Nerve and in the auditory cortex of the brain
- sound is distorted along the nerve (auditory dyssynchrony/neuropathy)
- sound reaches the brain but is unable to be processed in the auditory cortex (CAPD- Central Auditory Processing Disorder or APD - Auditory Processing Disorder)
- neuromas/neoplasm - any type of tumor that forms along the neural pathway; NF2 (Neurofibromatosis Type 2)
- disruption of the blood supply along the brainstem or in the brain (clot, stroke, or embolism)
- Multiple Sclerosis - demyelination of nerve fibers
- Hereditary conditions - Friedrich's ataxia or Charcot-Marie-Tooth disease

# Central Loss- Auditory Neuropathy

- pure tones may be normal or abnormal
- tests responses from the Auditory nerve and brainstem are **ABNORMAL**
- ability to recognize speech in quiet settings is variable
- ability to recognize speech in noise is poor
- cannot be identified with CT/MRI scans; extensive audiometric testing identifies the disorder

# Hearing Loss Simulation

<https://www.starkey.com/hearing-loss-simulator>

# Measuring Hearing Loss

Audiologists diagnose hearing loss.

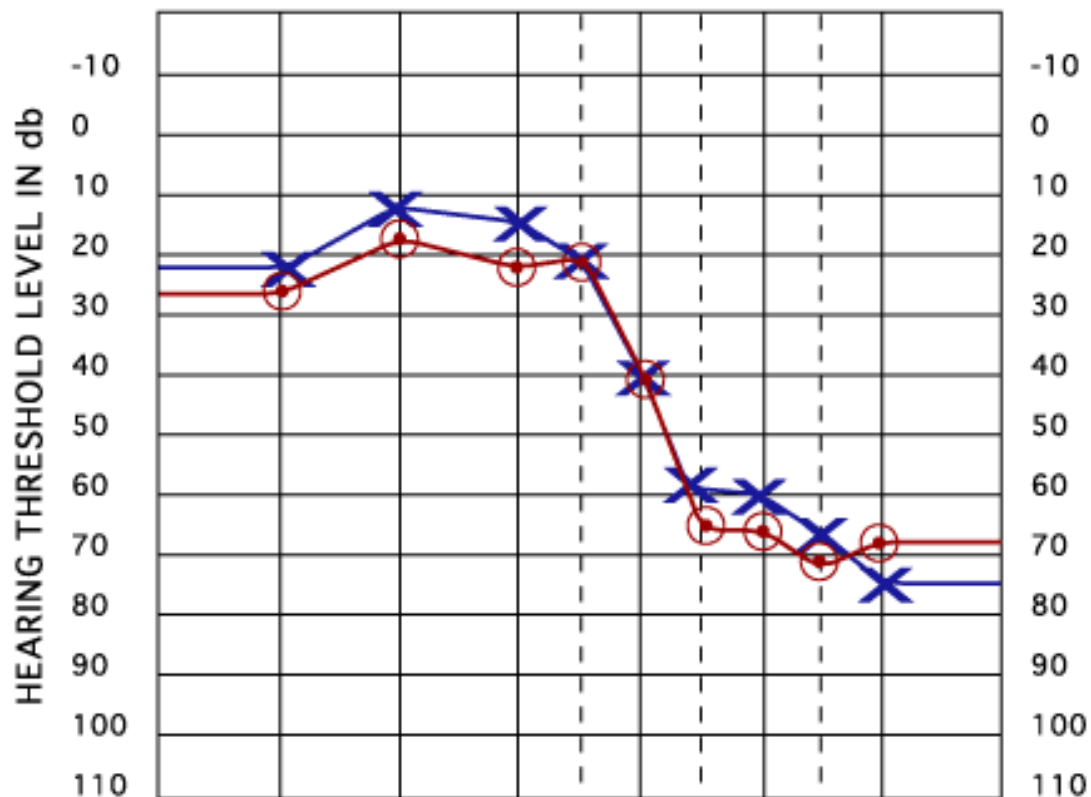
- use a series of tests to determine the type and degree of loss
- tests evaluate the entire listening system - outer -middle - inner ear and when necessary, the central auditory system as well
  - tests must be conducted in sound-proof areas with properly calibrated equipment

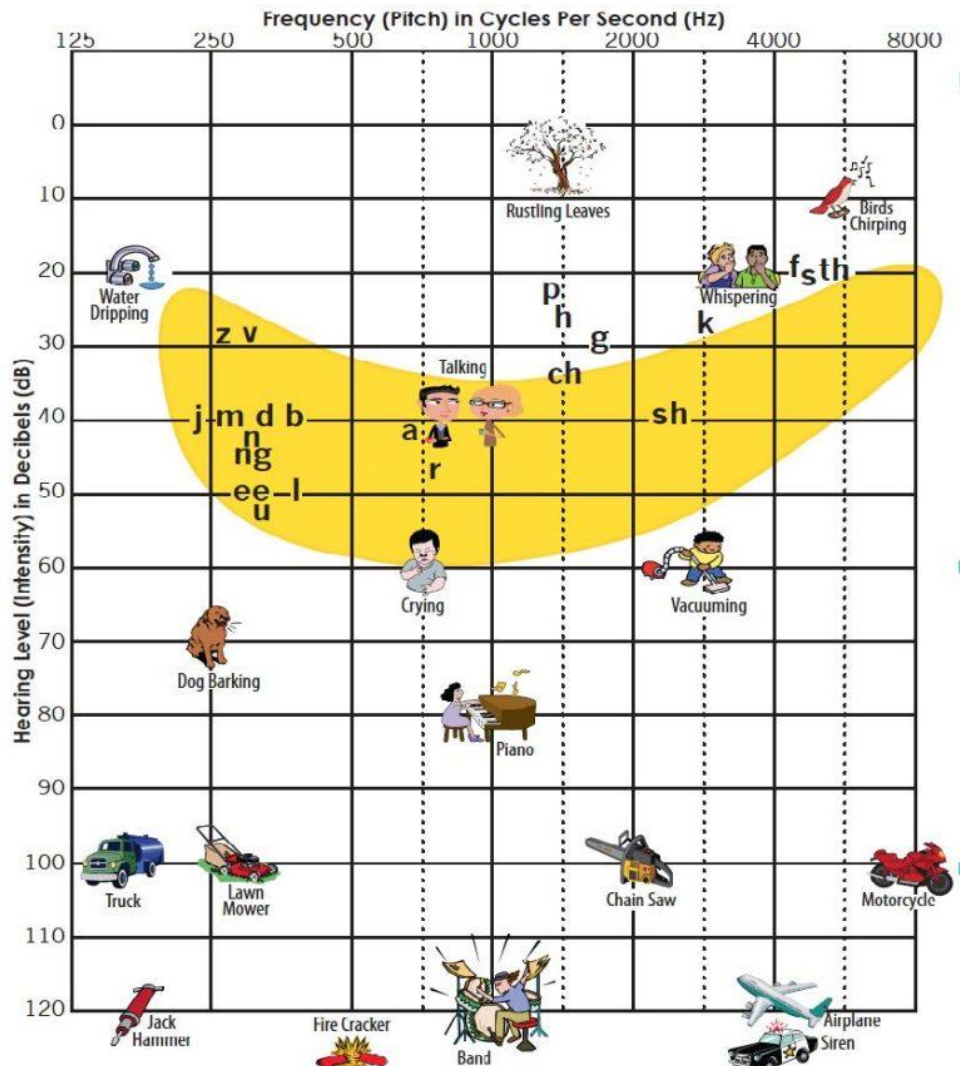


# AUDIOGRAM

FREQUENCY IN HERTZ

250 500 1000 2000 4000 8000







# Technology Options

- Hearing Aids
  - In the ear, behind the ear, in the canal
- Bone Conduction Hearing Devices
  - For conductive hearing loss
- Cochlear Implants
  - Must have more significant loss that can not be aided with hearing aid alone
- Auditory Brainstem Implant
  - Extremely rare in children, used when HA or CI won't work due to problem with cochlea or auditory nerve.

# We Hear With Our Brain



# Communication Options

- Sign Language
  - ASL – American Sign Language
  
- Listening and Spoken Language (LSL)
  - Auditory-Oral
  - Auditory-Verbal

# Communication Plan

- Is optional, but information must be included in IFSP
- Is in Pelican system
- <https://www.pattan.net/forms/pennsylvania-early-intervention-communication-plan/>

# Building the Team

- Family/Caregivers
- Audiologist
- Teacher of the Deaf
- Service Coordinator
- Speech/Language Pathologist
- Developmental Specialist/PT/OT/Vision
- Family Connections for Language and Learning
  - Parent guide
  - Deaf mentor



## Family Connections for Language and Learning

Serving Families of Children who are  
Deaf/ Hard of Hearing

*Affiliate Program of Parent to Parent of PA*

Families who learn that their child is deaf or hard of hearing often have many questions and are unsure of the next steps they need to take.



Family Connections for Language and Learning is a program made up of a team of experienced parents of children who are deaf or hard of hearing and deaf/ hard of hearing adults. We can help as you navigate the Early Intervention system and explore communication opportunities for your child.

*Our services are provided at no cost to your family.*

Family Connections for Language and Learning is supported by the Pennsylvania Departments of Health, Education, and Human Services, has an office at the Pennsylvania Training and Technical Assistance Network (PaTTAN) and shares resources with Early Intervention Technical Assistance (EITA).



# Family Connections for Language and Learning

<https://www.pattan.net/Publications/Guide-By-Your-Side-Rack-Card>

# Filling Your Family Toolbox

# Supports and Resources

- Alexander Graham Bell Association for the Deaf and Hard of Hearing: [www.agbell.org](http://www.agbell.org)
- American Speech-Language-Hearing Association: <https://www.asha.org/>
- American Society for Deaf Children: <https://deafchildren.org/>
- To learn more about listening and spoken language: [www.hearingfirst.org](http://www.hearingfirst.org)
- PA Early Hearing Detection and Intervention website: [https://www.infanthearing.org/states/state\\_profile.php?state=pennsylvania](https://www.infanthearing.org/states/state_profile.php?state=pennsylvania)
- Success For Children With Hearing Loss: [www.successforkidswithhearingloss.com](http://www.successforkidswithhearingloss.com)



Questions?

# Next Steps