



Audiology 101

What is Audiology?

Who to refer to?

When to refer?

Alisha Severson, AuD, CCC-A



University of Florida

Doctorate Degree in Audiology

University of Utah

Masters of Science in Audiology

Texas Tech University

*Bachelor of Science in
Communication Disorders*



What is an Audiologist?

According to the American Academy of Audiology,

Audiologists are the primary health-care professionals who evaluate, diagnose, treat, and manage hearing loss and balance disorders in individuals of all ages from infants and teens to adults and the elderly.



Who to refer

Almost half of American adults 75 or older have impaired hearing, according to the National Institutes of Health. But hearing loss isn't just a concern for geriatric patients. Fifteen percent of Americans aged 20 to 69 also suffer high-frequency hearing loss due to noise exposure at work or play. Yet the National Institute on Deafness and Other Communication Disorders estimates that only 1 in 5 people who could be helped by a hearing aid actually wears one.

Refer Adult Patients when:

- They complain that people are “mumbling”
- They frequently ask others to repeat themselves
- Family members complain that they listen to television too loudly
- They Withdraw from activities they previously enjoyed
- They have bothersome tinnitus (ringing, buzzing, whooshing, roaring)
- Dizziness, Ear Pain, Ear Fullness/Pressure
- History of noise exposure in jobs or hobbies
- Chemotherapeutic agents or other ototoxic medications (all ages)



Refer a Pediatric Patient When:

- Suspect middle ear fluid/chronic ear infections
- Not meeting speech and language milestones
- Decline in speech and language development
- Parents have a “hunch” that their child is not hearing well
- Child often asks others to repeat themselves

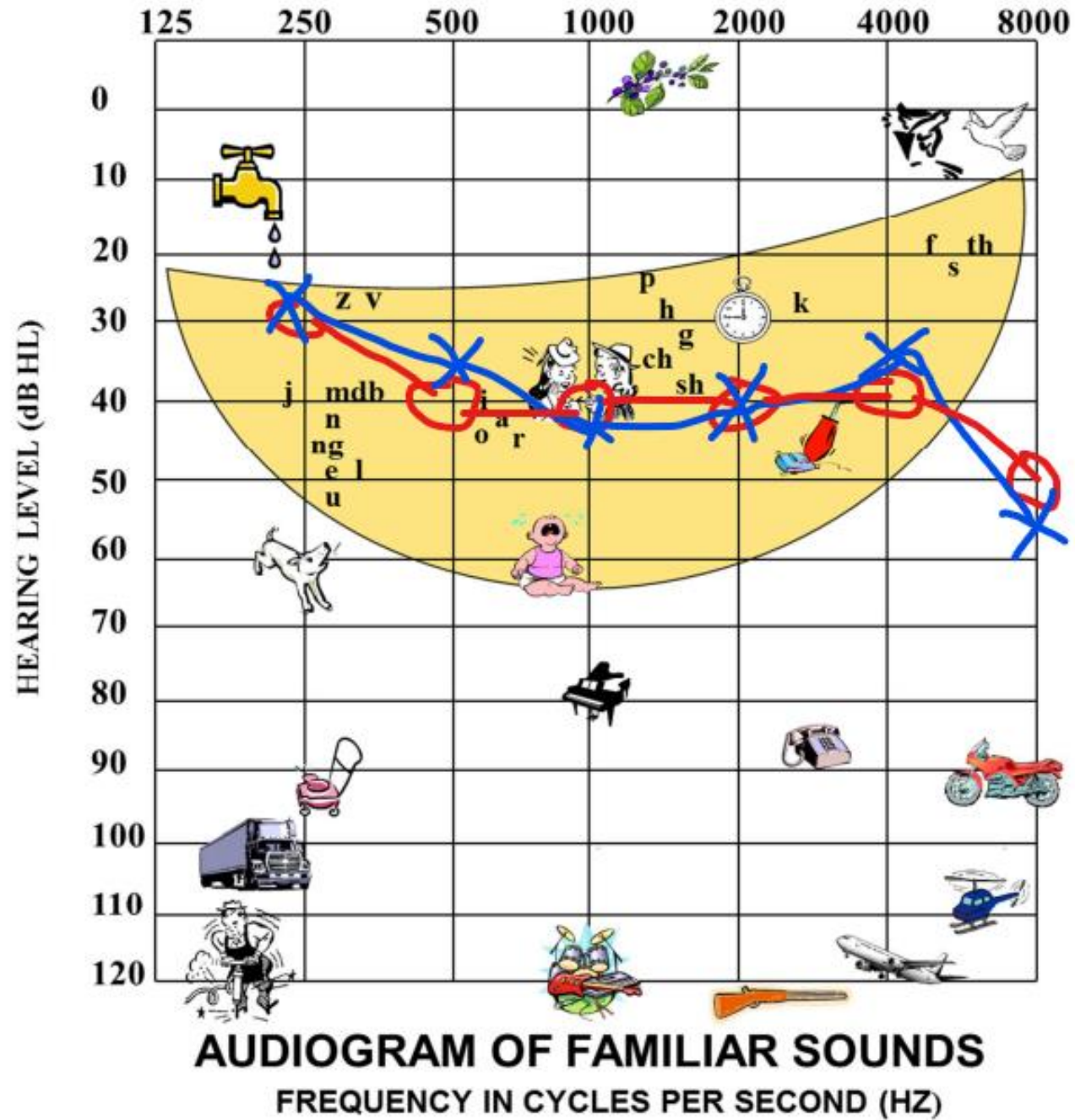
Audiology Procedures Available at HMC:

- Diagnostic hearing evaluations for children and adults
- Otoscopy & cerumen management
- Tympanometry and acoustic reflexes
- Otoacoustic emissions
- Air, bone and speech audiometry
- Identify hearing loss caused by otitis media, noise induced, normal aging process, hereditary factors, Meniere's disease.
- Tinnitus management/counseling
- Determine hearing aid and cochlear implant candidacy

Key:

Red O = Right Ear

Blue X = Left Ear



Tympanogram

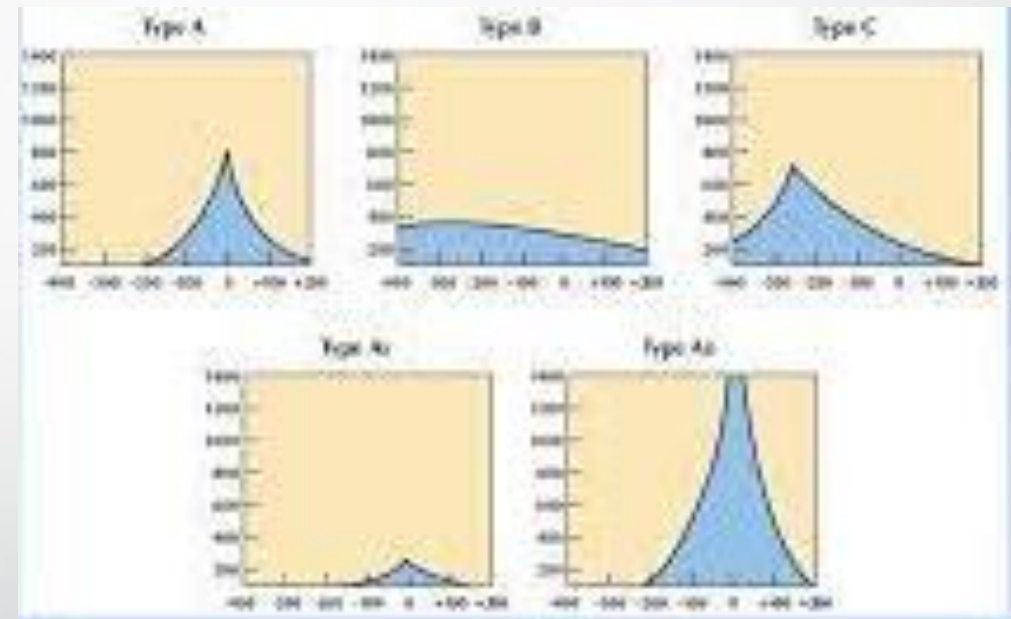
Type A: normal mobility with normal middle ear pressure.

Type B: TM perforation if large canal volume, probable middle ear fluid if normal canal volume, cerumen obstruction if small canal volume.

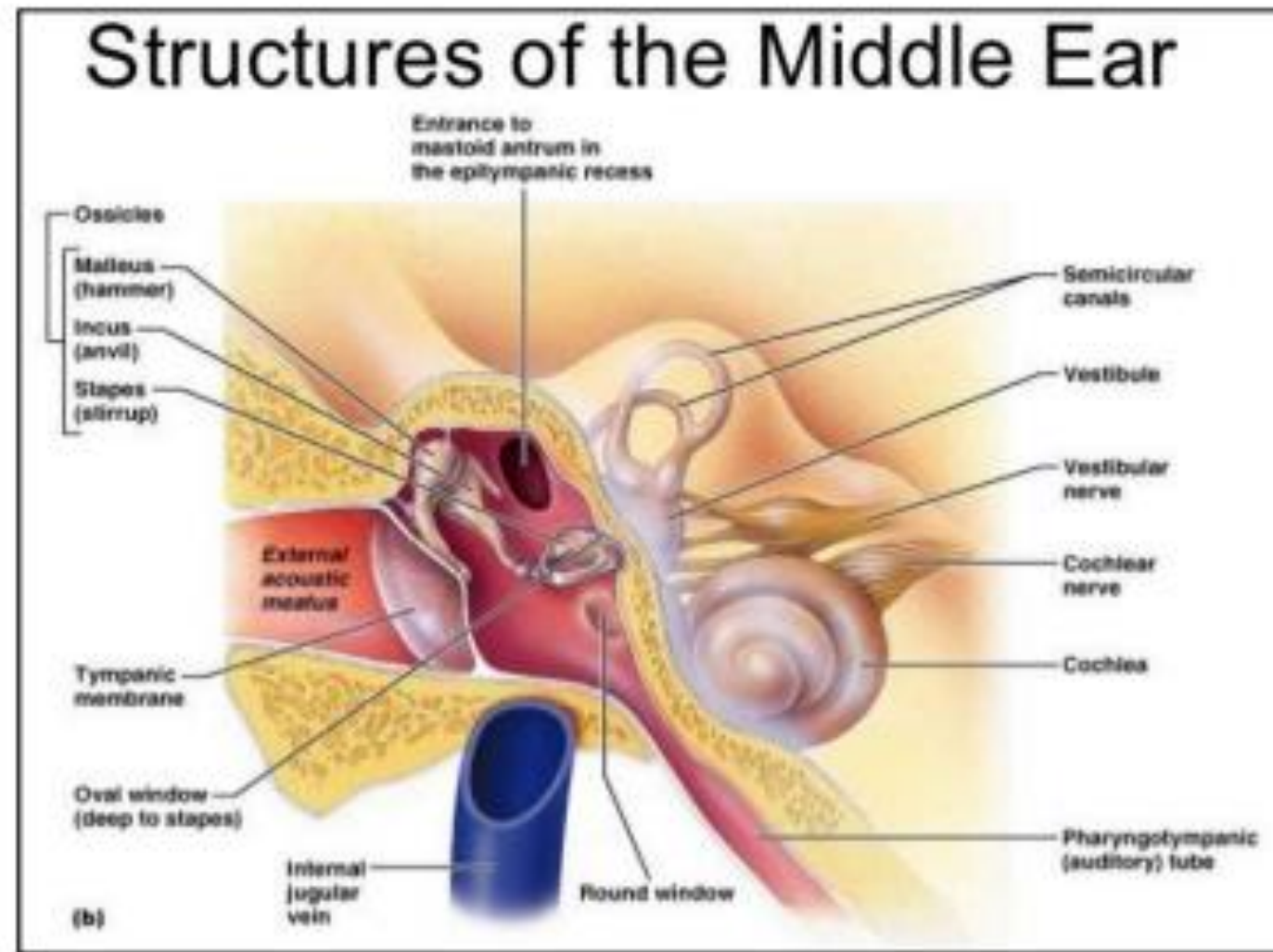
Type C: negative middle ear pressure, at risk for fluid or improving.

Type As: shallow mobility of eardrum/ stiff middle ear system, possible otosclerosis.

Type Ad: hypermobility of eardrum, could indicate disarticulated ossicles, or pinhole perforation that has healed.



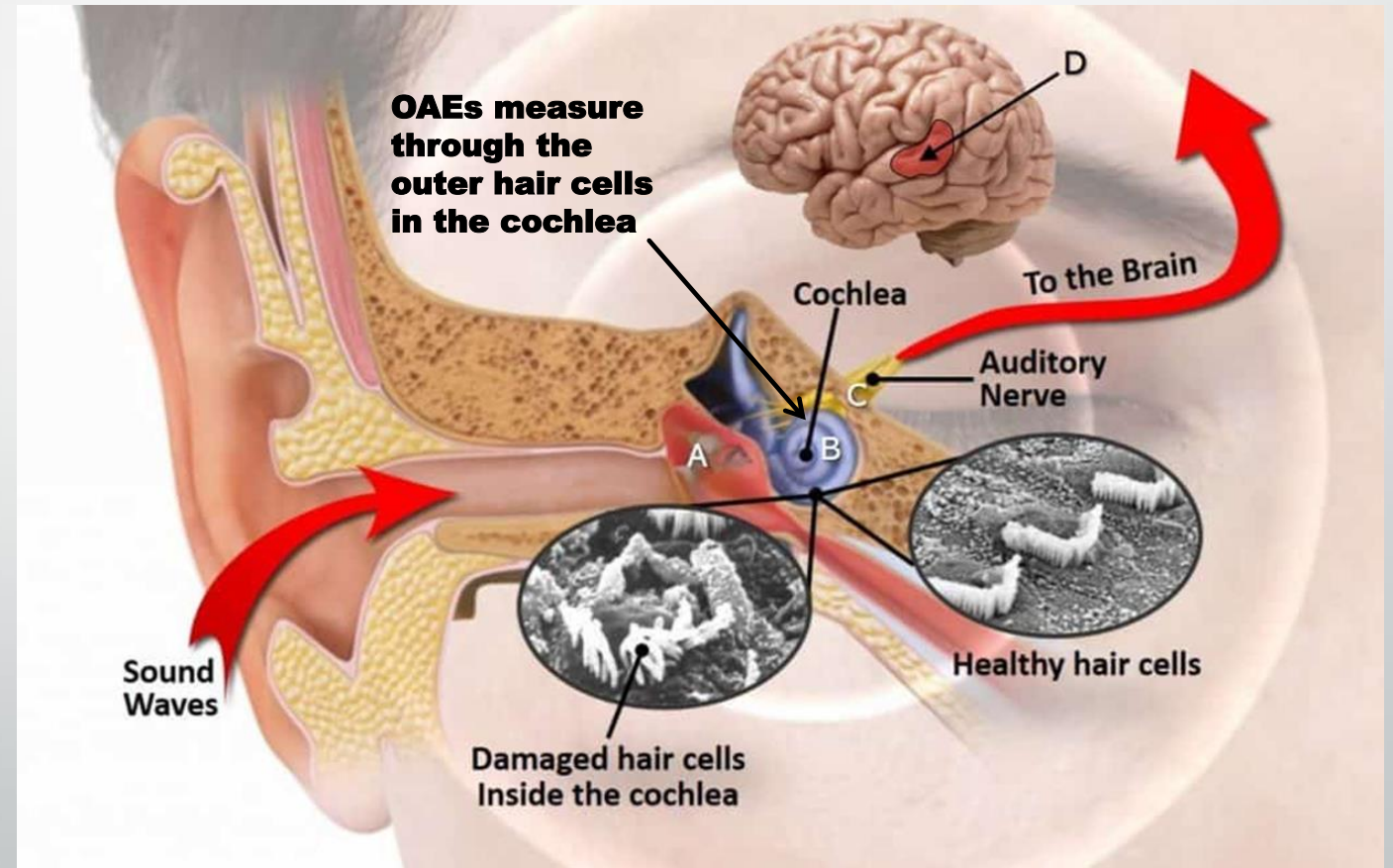
Tympanograms tell us about middle ear & eustachian tube function



Otoacoustic Emissions (OAEs)

A test that measures the inner ear's response to sound, not a true test of hearing.

- Results are either "Pass" or "Refer"
- Ear specific/ frequency specific
- Must have normal middle ear function
- Can test up to 12 frequencies
- Normal result generally indicates no worse than mild hearing loss.
- Indication of outer hair cell function in the cochlea, but not beyond.
- Must follow-up with behavioral testing once age appropriate.
- Great for testing children, non-organic hearing loss & adult tinnitus patients.





ENT Referral Recommended after hearing evaluation if:

- Chronic middle ear fluid
- Child with a newly identified hearing loss
- Sudden hearing loss (urgent!)
- Asymmetrical hearing loss
- Pain
- Drainage
- Dizziness
- Severe tinnitus

Looking Ahead

- Auditory Brainstem Response Testing
 - Diagnostic hearing evaluations/hearing threshold estimates for newborns
 - ABR is next step if middle ears are clear, and infant does not pass OAE testing
 - Retro-cochlear function for adults (detecting VIIIth nerve acoustic neuromas)





Alisha Severson, AuD., CCC-A

East Hawaii Health | Audiology

A Department of Ka`u Hospital

1190 Waiuanue Ave., Ground Floor

Phone (808) 932-3047 • Fax (808) 974-6732



Questions?