

Hearing Loss: Causes, types and degree

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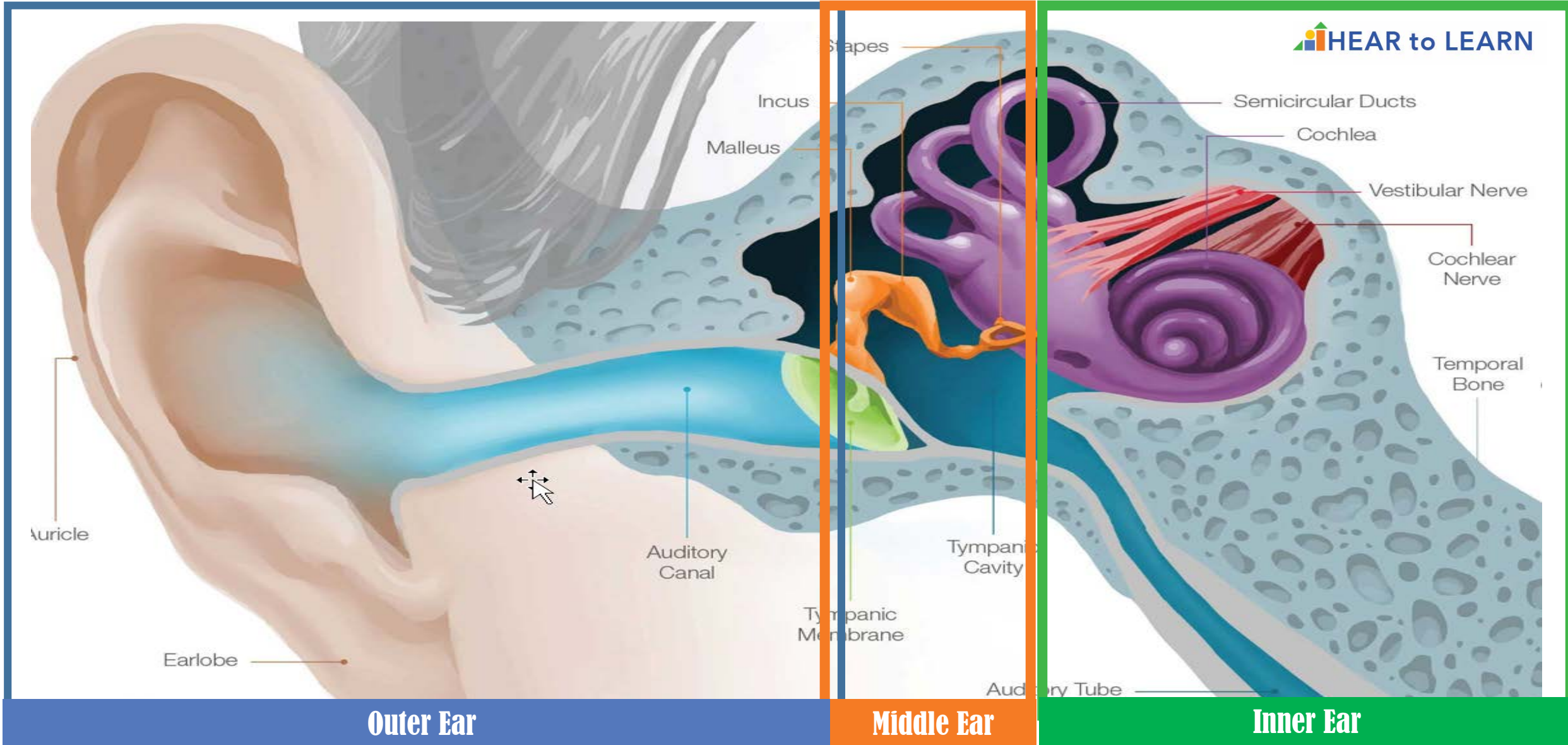


Learning Objectives

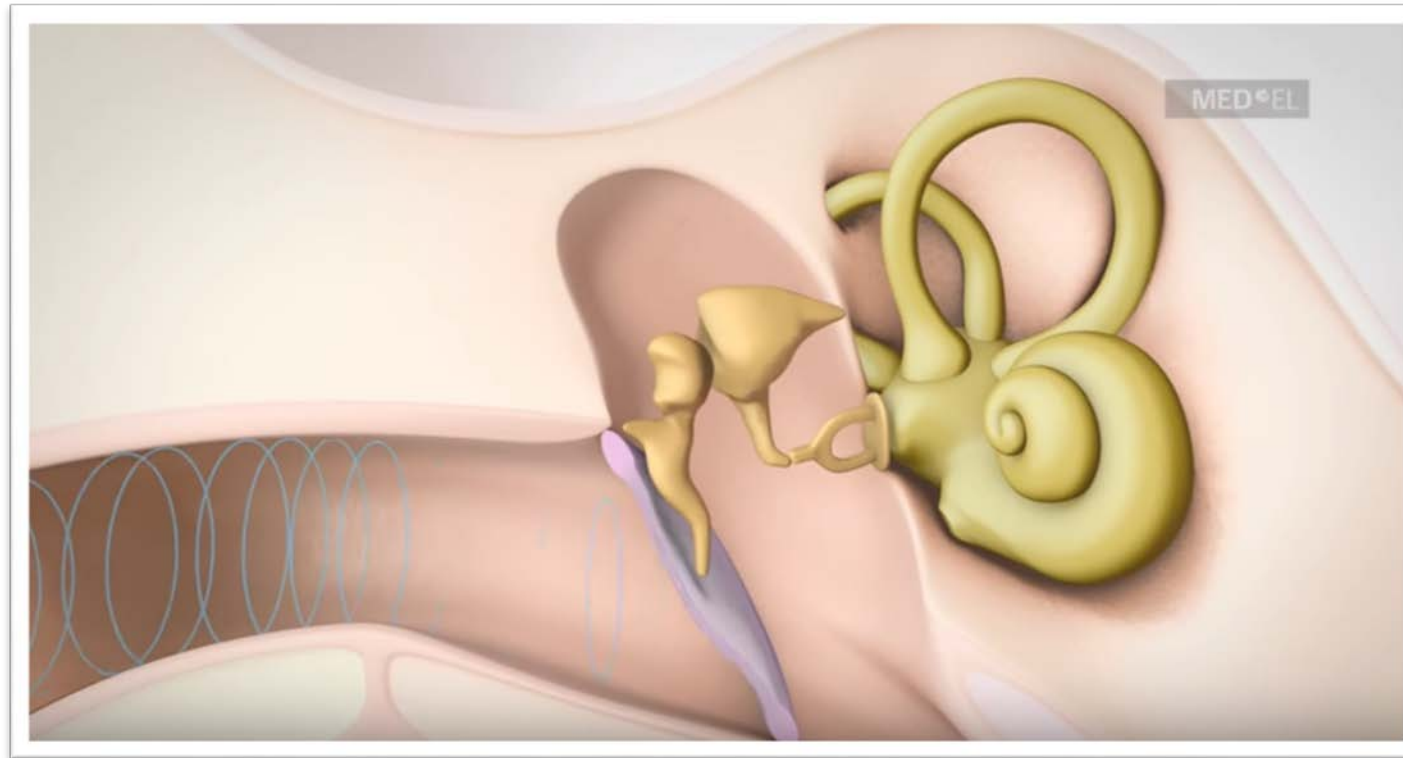
1. Understand the parts of the ear and how the hearing system works
2. Learn the definition of hearing loss and common causes among children
3. Discuss different types of hearing loss
4. Discuss the varying degrees of hearing loss
5. Understand how to read an audiogram



Ear Anatomy



How Hearing Works?

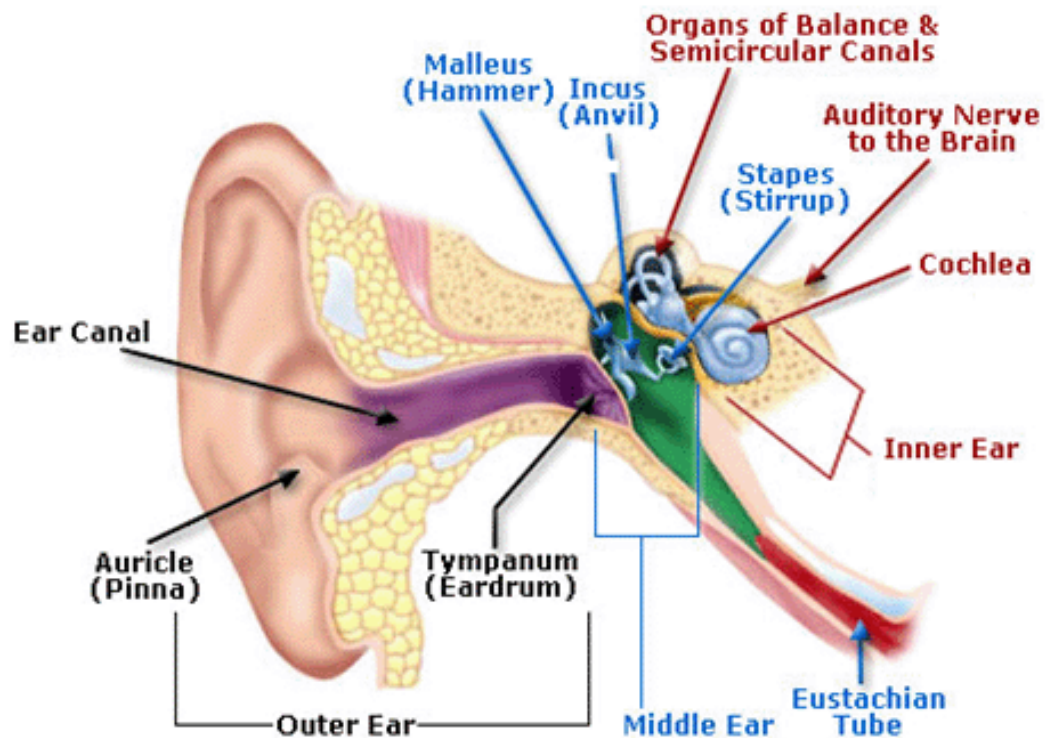


Hearing and How it Works

MED-EL

<https://youtu.be/flAxGsV1q0>

What is Hearing Loss?



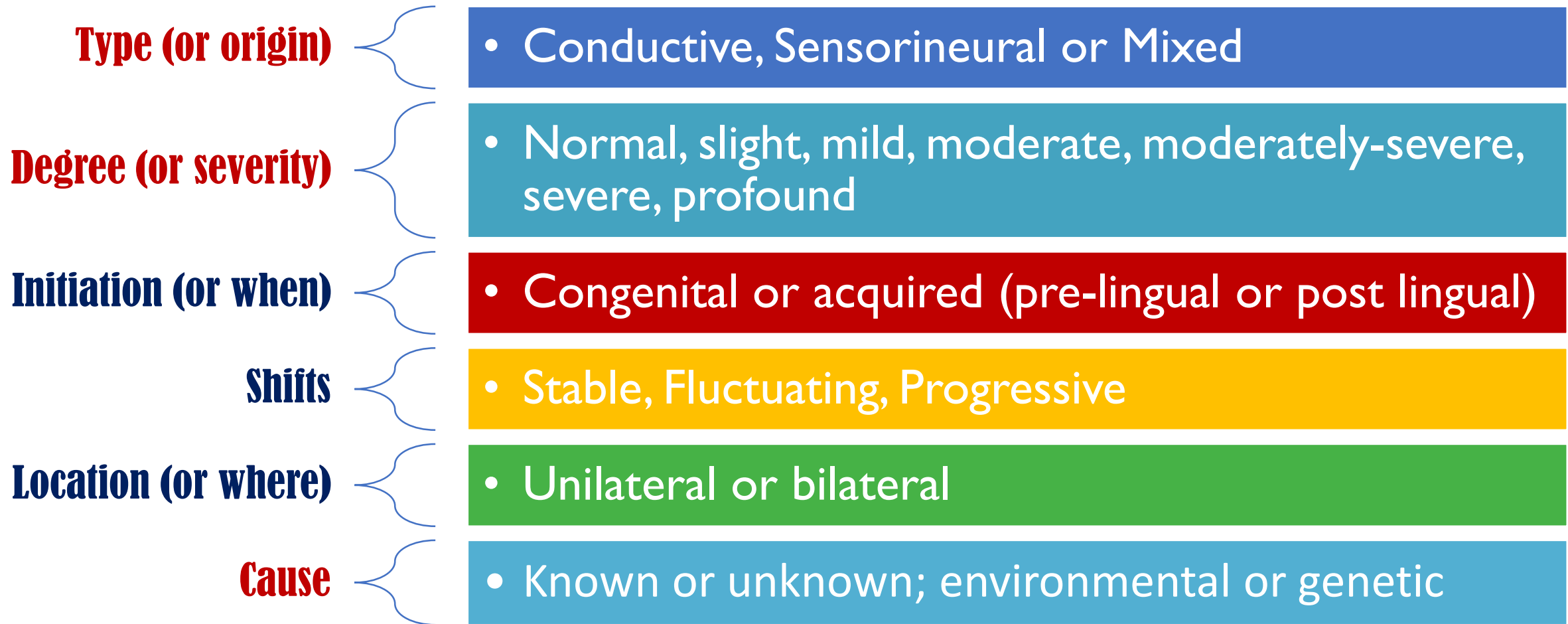
Hearing loss is when your ability to hear is reduced

The type of hearing problem will depend on which part of the ear is not responding well.

Problems can be located at:

- Outer ear
- Middle ear
- Inner ear
- Auditory nerve
- Auditory pathway

Categorizing Hearing Loss



Prevalence of Hearing Loss

50% - hearing loss is caused by genetic factors

90% - children with congenital hearing loss are born to normal hearing parents

20-30% - Unknown cause of genetic hearing loss

Premature babies – higher risk of hearing loss

Common Causes

Prenatal (before birth):

- Infections during pregnancy (CMV, syphilis, rubella)
- Maternal diabetes
- Maternal use of alcohol or drugs
- Other maternal viral or bacterial illnesses

Postnatal (at or after birth):

- Prematurity (including low birth weight)
- Lack of oxygen and use of mechanical oxygen
- Birth trauma
- Childhood illnesses: rubella, meningitis
- Severe injury to head and/or ears
- Untreated otitis media or ear infections
- Ototoxic medications
- Excessive noise for an extended duration



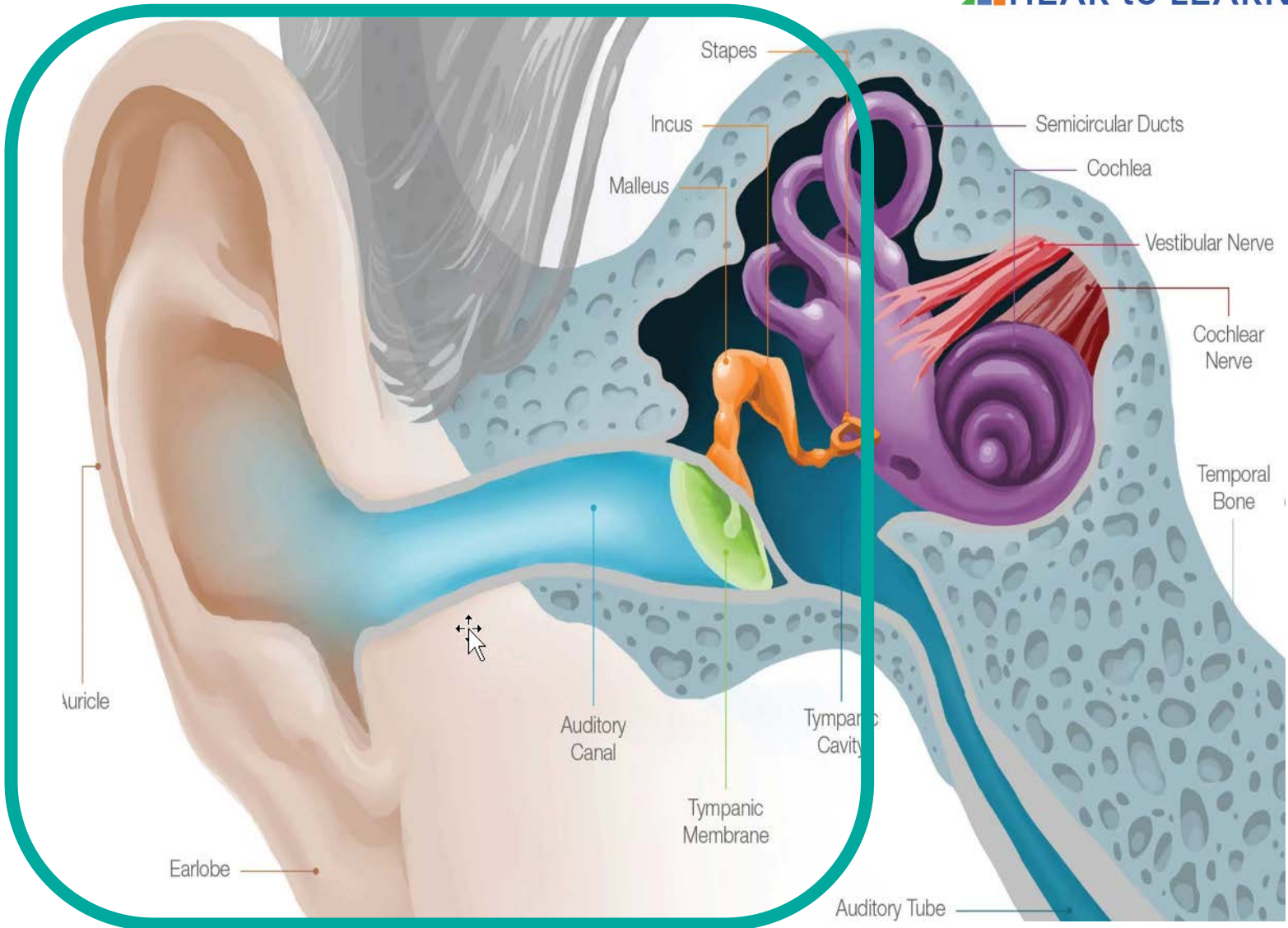
Types of Hearing Loss

Conductive Hearing Loss

Problems in the outer or middle ear space

Common causes:

- Ear infection (otitis media)
- Fluid in the middle ear
- Foreign objects in the ear canal
- Damage to the eardrum
- Malformations: pinna, auditory canal, ossicles.



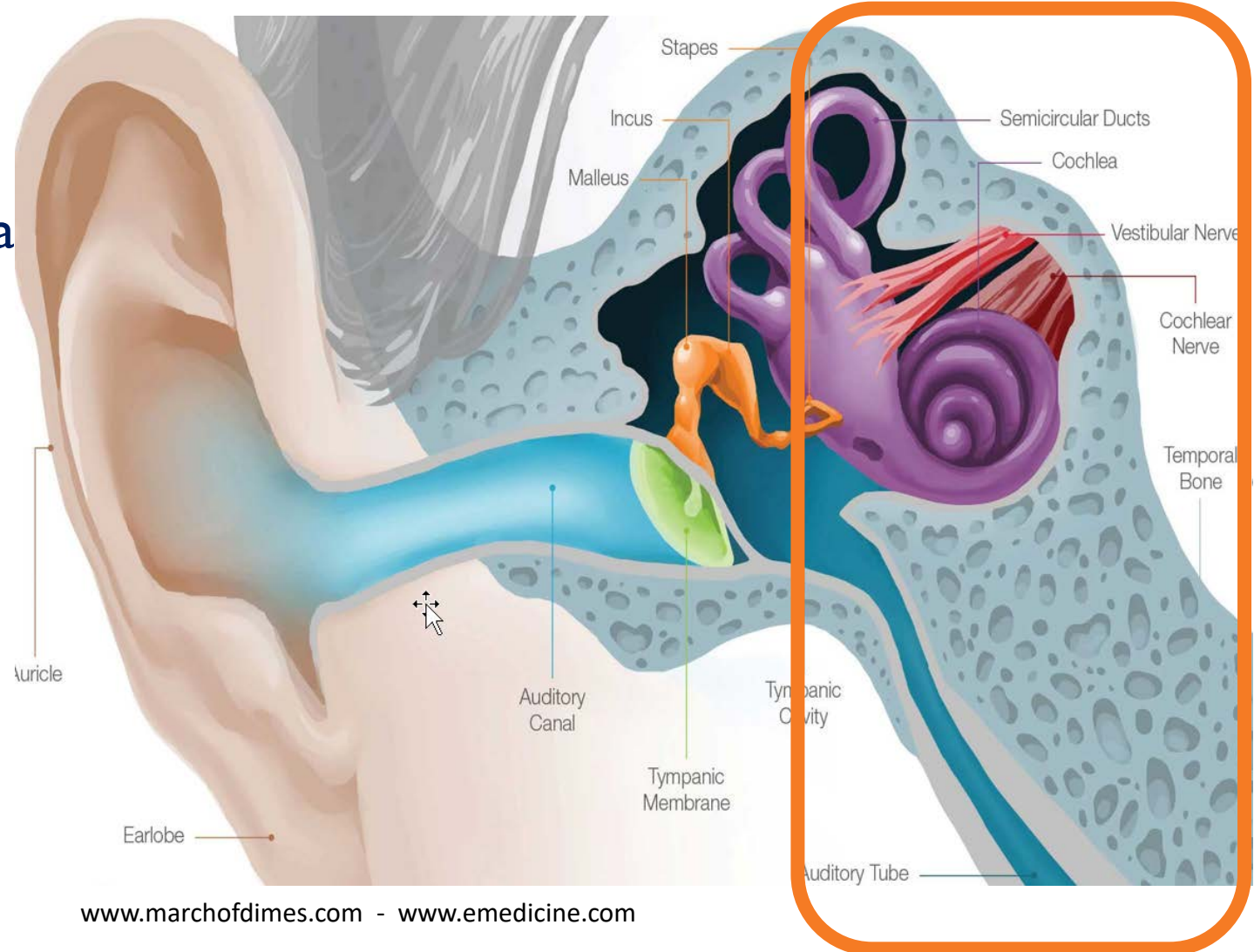
Types of Hearing Loss

Sensorineural Hearing Loss

Problems in the inner ear, the cochlea or the auditory nerve.

Common causes:

- Malformations: cochlea, auditory nerve.
- Ototoxic medication
- Infections: meningitis
- Severe head injury



Types of Hearing Loss

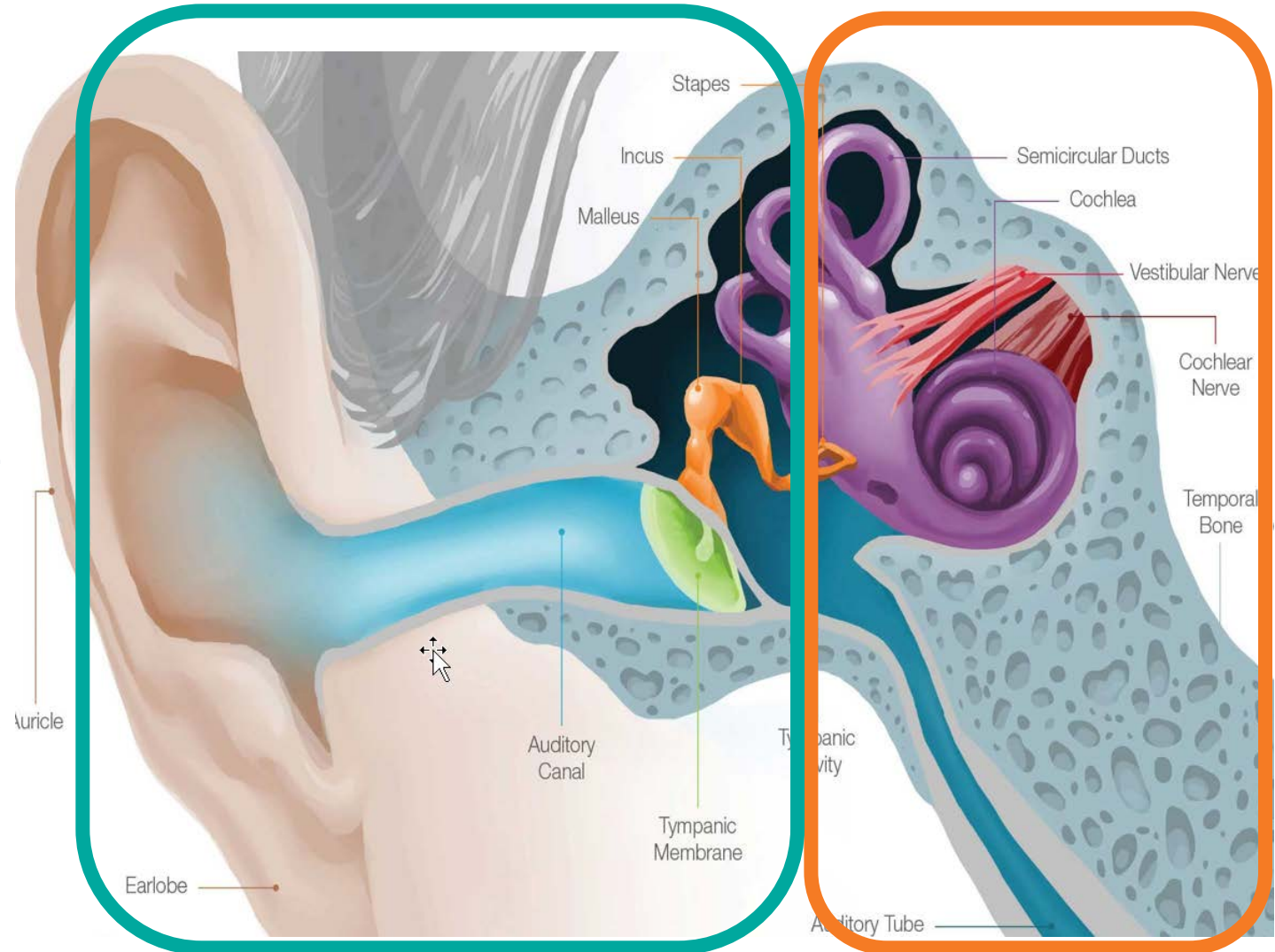
Mixed Hearing Loss

Problems in the outer, middle and inner ear

Combination between a conductive hearing loss and a sensorineural hearing loss

Common causes:

- Otitis media + malformations in the inner ear



Severity Hearing Loss

Normal: 0-15 dB HL

Slight: 15-25 dB HL

Mild: 25-40 dB HL

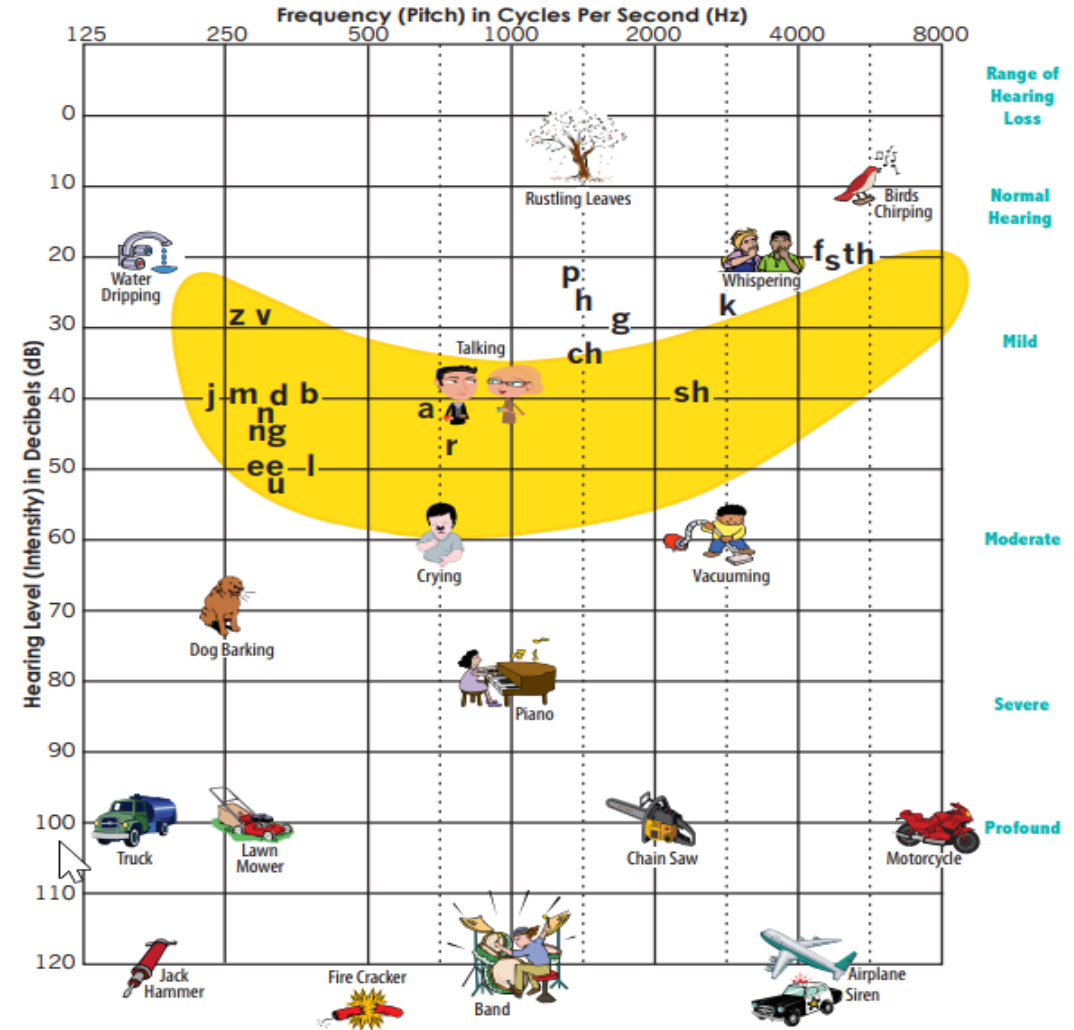
Moderate: 40-55 dB HL

Moderately-Severe: 55- 70 dB HL

Severe: 70-90 dB HL

Profound: 90+ dB HL

Audiogram of Familiar Sounds



Adapted from: American Academy of Audiology, www.audiology.org and Northern, J. & Downs, M. (2002). Audiogram of familiar sounds; and Ling, D. & Ling, A. (1978). Aural Habilitation.

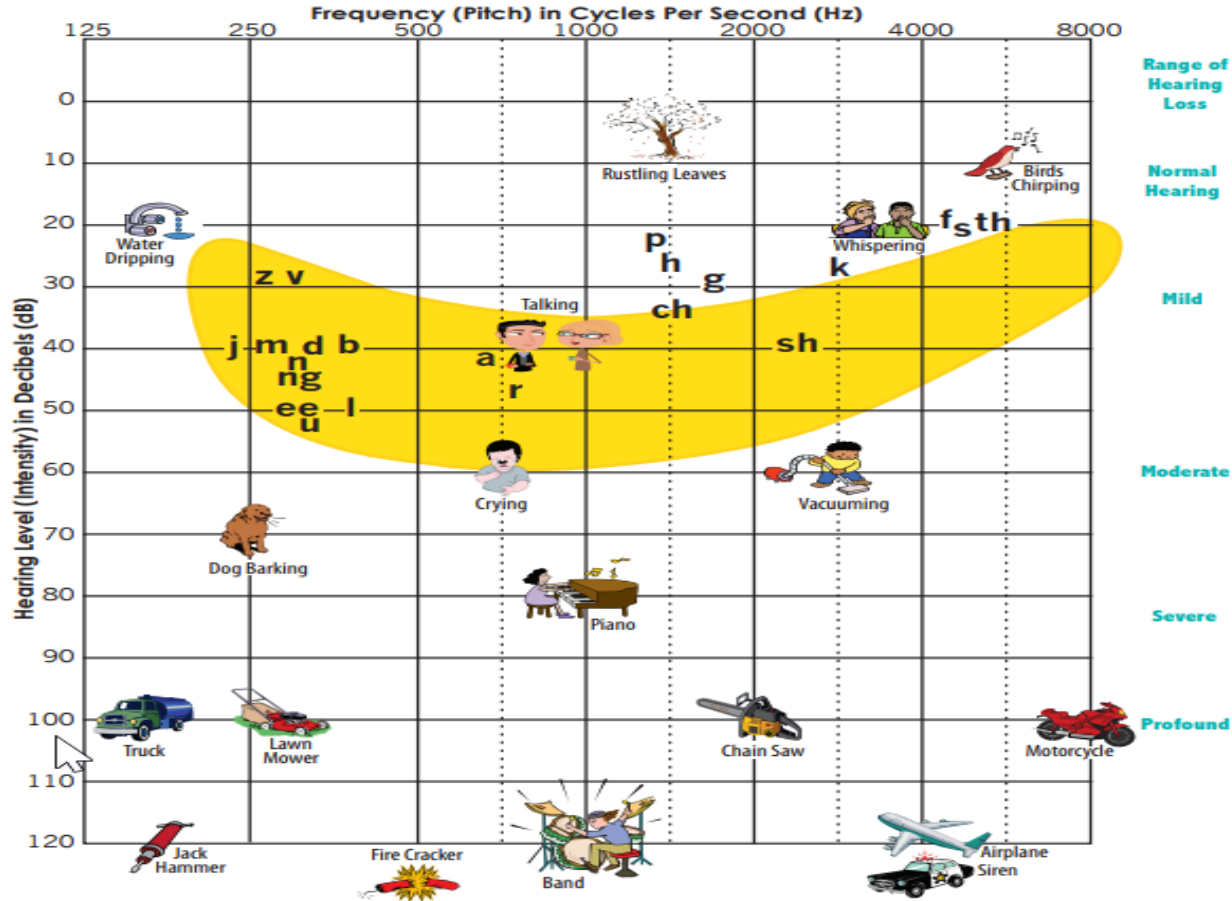
Audiogram Interpretation



Ideas & Advice for Parents of Children with Hearing Loss

The leading diagnostic and education center for young children with hearing loss

Audiogram of Familiar Sounds

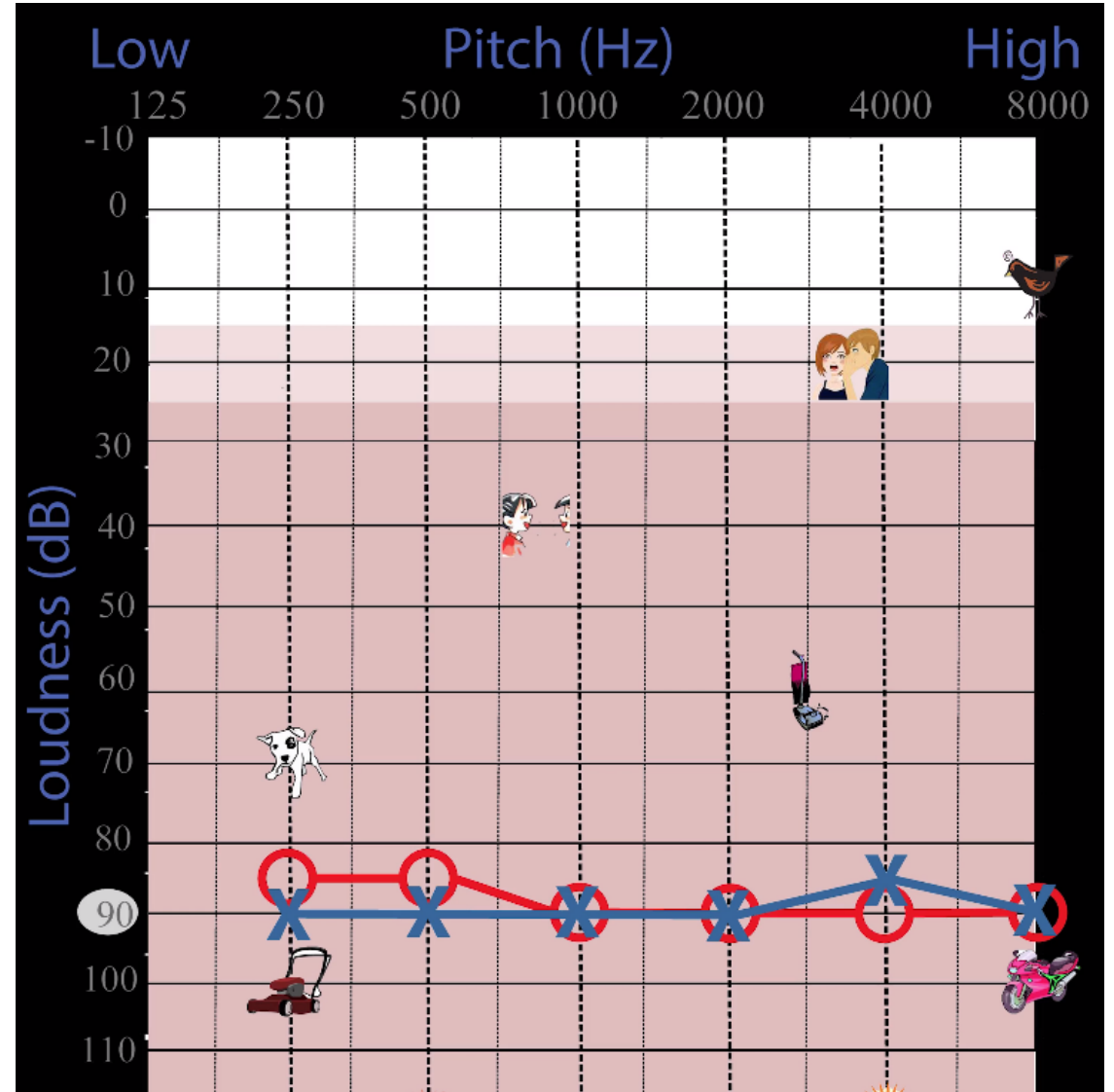


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Resources

- ☐ MEDEL: How hearing works? <https://youtu.be/fIIAxGsVIq0>
- ☐ John Tracy Clinic: http://www.jtc.org/wp-content/uploads/2015/11/Audiogram_What_Does_Child_Hear.pdf
- ☐ Hear To Learn: “Understanding the Audiogram” <http://www.heartolearn.org/tutorials/hearing-loss-management/understanding-the-audiogram.html>
- ☐ Future webinars: <http://heartolearn.org/communities/learning-together.html>

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[Questions and Comments](#)

