Missouri Coordinated School Health Conference 2025

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Hearing Screening Guidelines for School Health

Objectives

At the end of this presentation the participants will be able to:

- Explain the importance of hearing screening for the school-aged child
- Identify resources for hearing screening protocols and guidelines

How Does Hearing Loss Sound?

Hearing Loss

It is estimated 1/3 of children with minimal or unilateral hearing loss fail a grade.

Legislation Affecting Hearing Screenings

All hospitals delivering babies must now assure a screening is performed

Why Do Screenings?

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Prevalence of Hearing Loss

- Between 1 and 6 of 1,000 newborns are born with hearing loss.
- The incidence of hearing loss between 6 and 19 years of age is estimated to be 15%
- Early identification and treatment can prevent at or at least alleviate the consequences

Characteristics of Population Based Screening Program

- **Validity** – ability to identify those who have the condition
- **Reliability** – consistent screening results
- **Yield** – number of person identified
- **Cost** – personnel and equipment

Types of Hearing Loss

- **Conductive** – site of lesion is at the external or middle ear
- **Sensorineural** – site of lesion is at the cochlea or auditory nerve
- **Mixed** – combination of conductive and sensorineural

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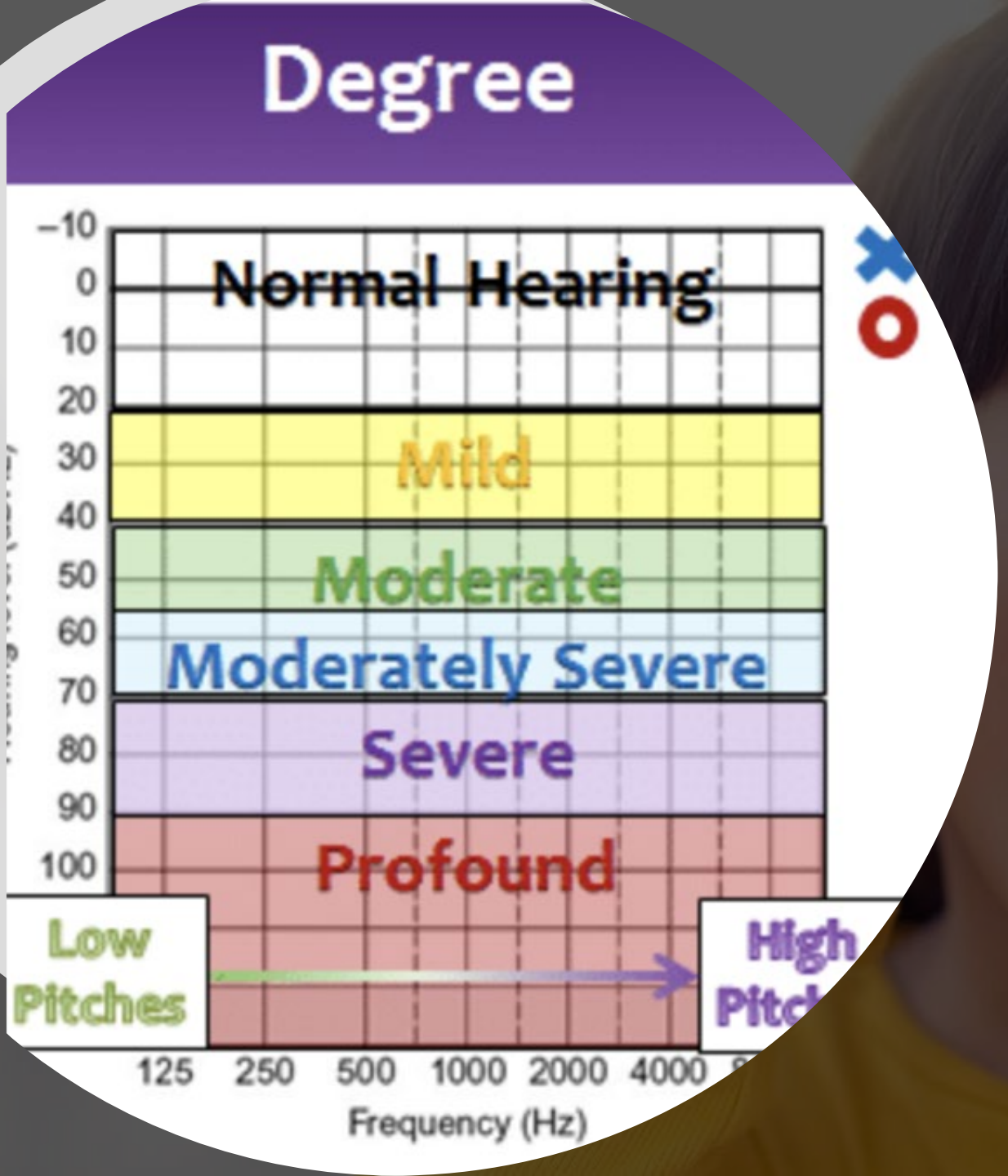

Normal hearing occurs between -10 and 20 decibels (loudness of sound).

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Degrees of Hearing Loss

- Mild hearing loss = 20 to 40 dB
- Moderate hearing loss = 40 to 70 dB
- Severe hearing loss = 70 to 90 dB
- Profound hearing loss = 90 dB or greater

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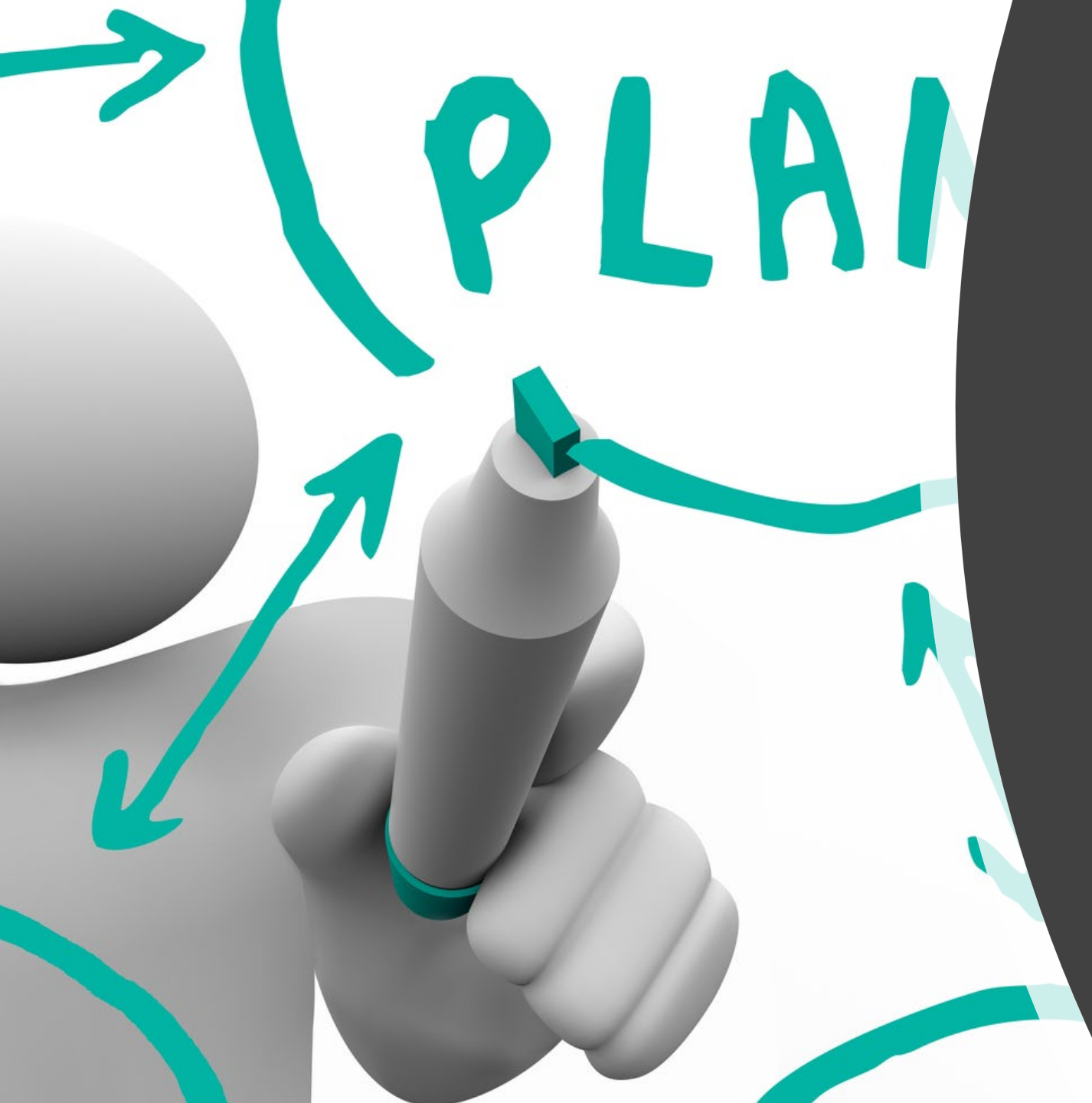

Setting Up A Hearing Screening Program

Basics:

- Should be coordinated by the local school or community health nurse
- Should be a part of the overall hearing conservation program

Schedule

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Grade	Screen	Type of Screening
All students new to district	**Recommended**	**Age Appropriate**
Pre-K, K	Recommended	Audiometer
1st	Recommended	Audiometer
2nd	Recommended	Audiometer
3rd	Recommended	Audiometer
7th	Recommended for educational purposes related to noise exposure	Audiometer

Also - Any student referred by the teacher parent, or self and special education evaluation requests

When to Screen

Not the first week of school

Children entering school for the first time

- Need time to adjust to school environment
- BUT, don't wait too long in case of hearing loss

Don't wait too long

- Cold and flu season
- Need time for follow-up

Screening Protocols

Prescreening Education

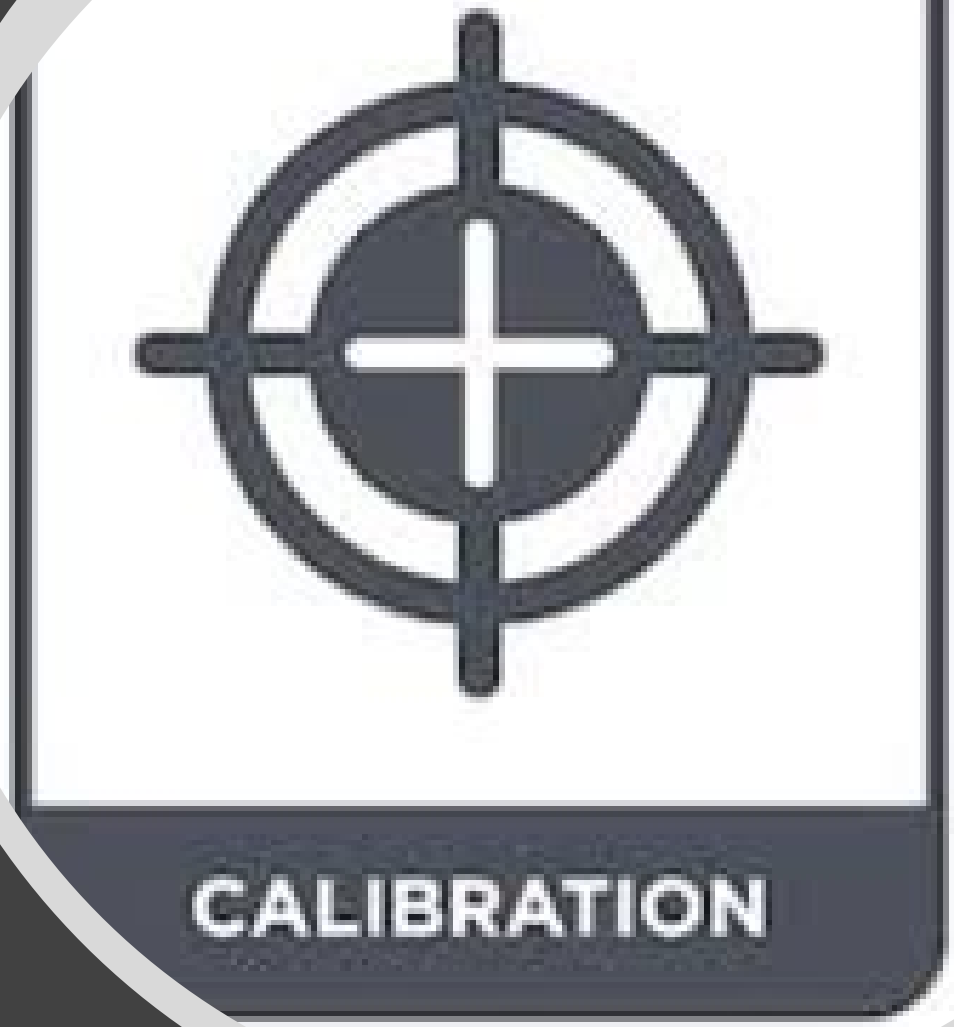
- Take the audiometer in the classroom to show students
- Show students how they will have headphones placed over their ears in order to hear the sounds
- Utilize the wonderful edutainment video on hearing screening

Hearing Screening Preparation

Let's get ready for your hearing screening!

Portable Audiometer

- A portable audiometer is needed
- Conduct a biological (or listening) check everyday that it is used
- Calibrate the audiometer on a yearly basis (see list for sources of calibration services)
- Use extreme caution when moving audiometer around



Maico 27

Earscan 3M

Maico 39

Maico Pilot Audiometer

(*this is MORE than you need)

Hearing Aids/Cochlear Implants

Students with the following should not be screened:

- Hearing aids
- Cochlear implants
- Documented hearing loss (by an

Environment for Screening

Conduct pure tone screening in a room where the ambient noise is low enough to allow detection of selected stimuli.

Environment for Screening

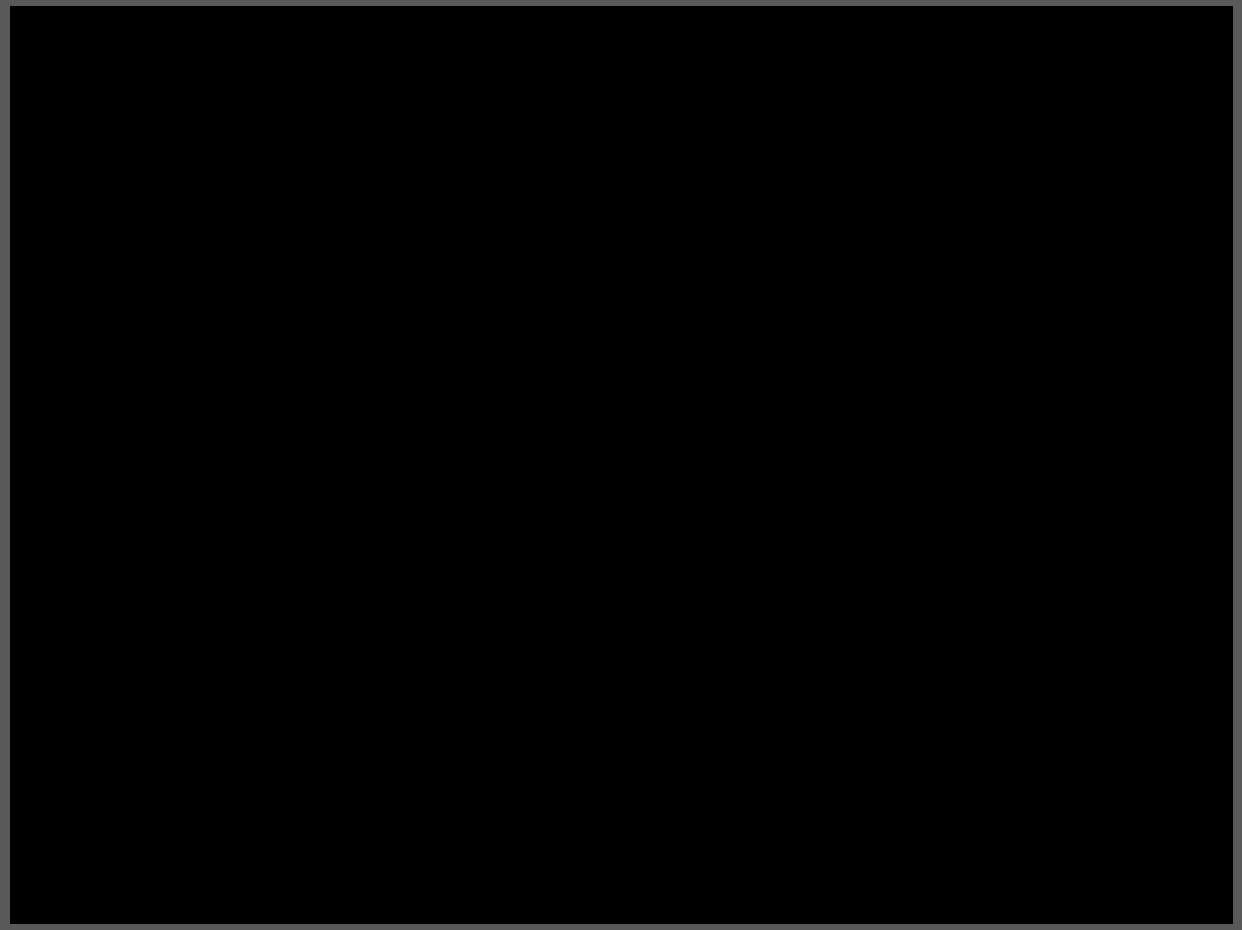
- The American Speech-Language-Hearing Association recommends that to accomplish a 20 dB beep, ambient room noise should not be greater than:
  - 49.5 dB SPL at 1000 Hz
  - 54.5 dB SPL at 2000 Hz
  - 62 dB SPL at 4000 Hz
  - (ASHA, 1985)

Protocol Summary

- Pure tone screening
- Rescreening (if did not pass 1st screen)
- Referral
- Follow-up
- Annual summary

How is a pure tone hearing screening performed?

Audiometer Procedure

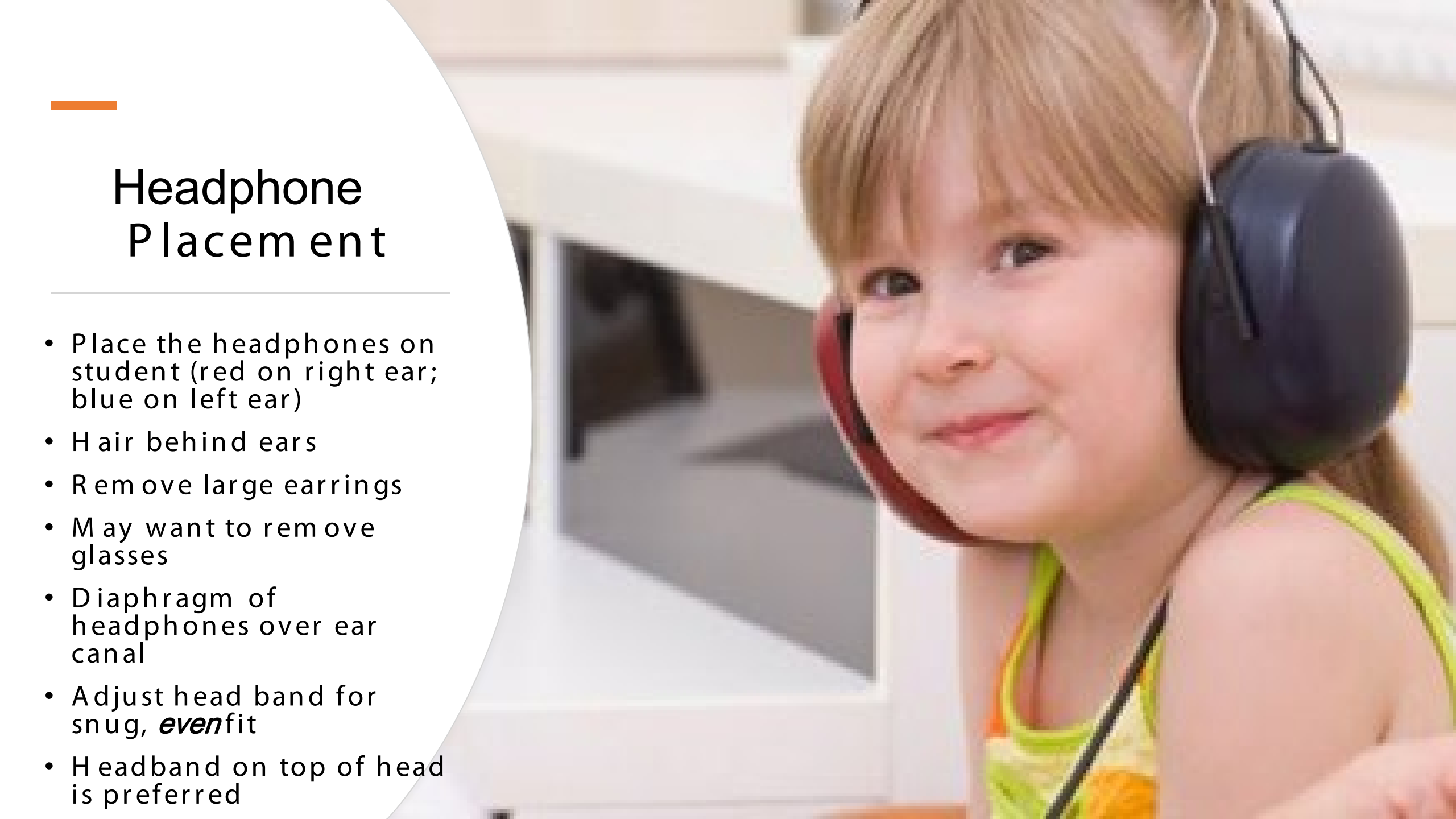


Audiometer Controls

- Power (on/off)
- Ear indicator (right/left)
- Intensity selector (dB; e.g. 40 dB HL)
- Frequency selector (Hz; e.g. 4000 Hz)
- Signal selector (use continuous or pulsed tone only)
- Presentation function (how do you present the tone)

Headphone Placement

- Place the headphones on student (red on right ear; blue on left ear)
- Hair behind ears
- Remove large earrings
- May want to remove glasses
- Diaphragm of headphones over ear canal
- Adjust head band for snug, ***even*** fit
- Headband on top of head is preferred



How to Screen

- Instruct student for the task (e.g. raise hand when they hear the beep)
- Condition the student to the task (i.e. present a tone in one ear at one frequency ABOVE the screening level – example: 50 dB
- Once the student is conditioned – start the screening protocol

How to Screen

- Administer an initial sweep screen, presenting tones at 1000, 2000, and 4000 Hz in each ear at 20 dB
- Record as pass or fail at each level

Screening Protocol

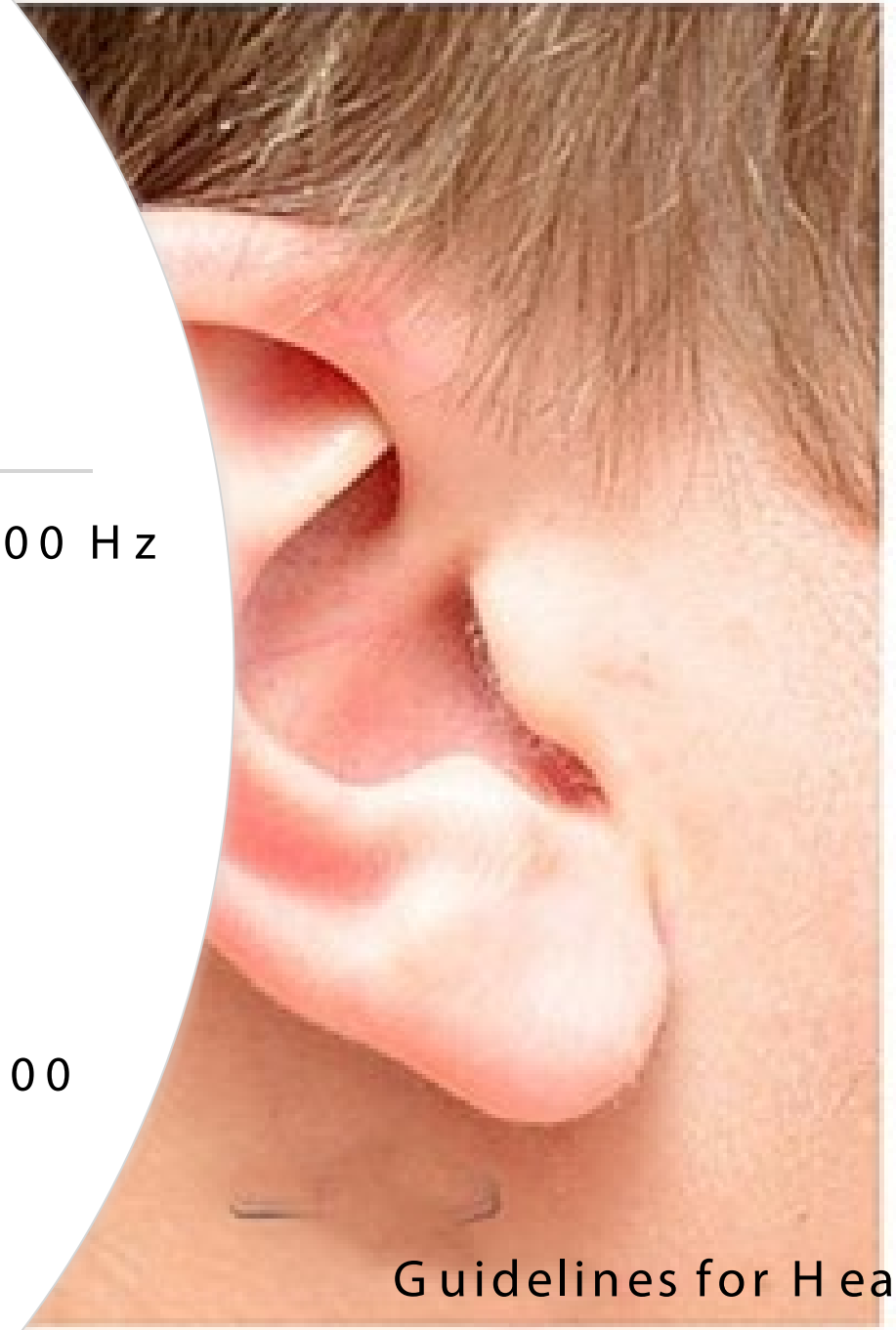
Right Ear 1000 Hz
20 dB

2000 Hz
20 dB

4000 Hz
20 dB

Left Ear 4000 Hz 20 dB

2000 Hz
20 dB



Pass/Fail Criteria

- Student must pass all frequencies in an ear for that ear to be classified as a "pass"
- If a student does not pass ALL frequencies in each ear, he/she should be re-screened in 2-4 weeks

Recheck/Referral Criteria

- If the child does not respond at the recommended screening level at any frequency in either ear, immediately remove the headphones, reinstruct the child, reposition and rescreen

- If other screeners are available, you may want to have another

Recheck/Referral Criteria

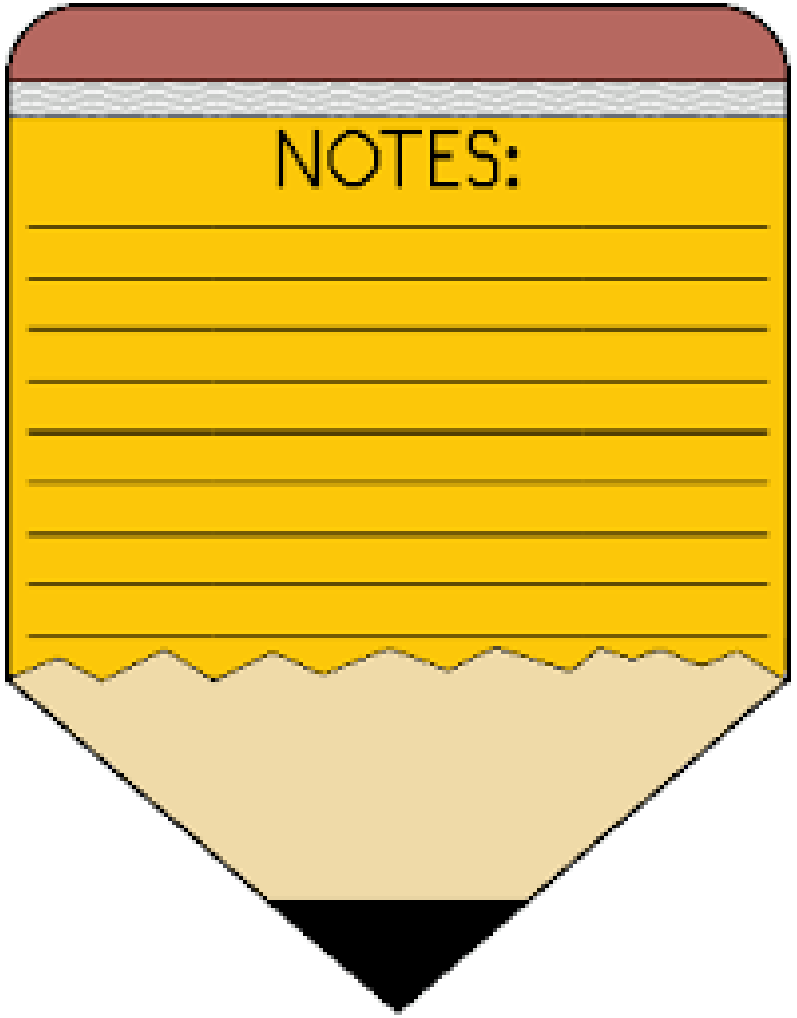
- If the child continues to miss at any frequency in either ear, the child should be rescreened in 14-21 days
- If the child fails the re-screening at this time he or she should be referred for further evaluation

Play Audiometry

- Use with students who are:
  - Difficult to test
  - Developmentally delayed
  - Non-English speaking
- Use a play task (drop blocks in a bucket)
- Teach the child the task at an elevated intensity level (e.g. 50 dB HL)
- Make sure child can do the task on their own before you attempt screening at 20 dB HL

Screening Notes

- Do not increase the dB levels to accommodate for noise in the environment
- All failures should be rescreened to confirm the need for referral



Referral

- Refer immediately if you observe physical abnormalities that are not documented in the student's file or if there is a serious concern.
- Refer to MD or Audiologist if

Referral Process

- Tracking referrals (have a system in place)
- Teacher notification
- Watch list

Follow - up

- Send letter, referral form, financial assistance information and list of appropriate professionals to the parent/guardian (make sure school nurse contact info is on referral form)
- If no response from parent/guardian in two weeks, follow-up with a

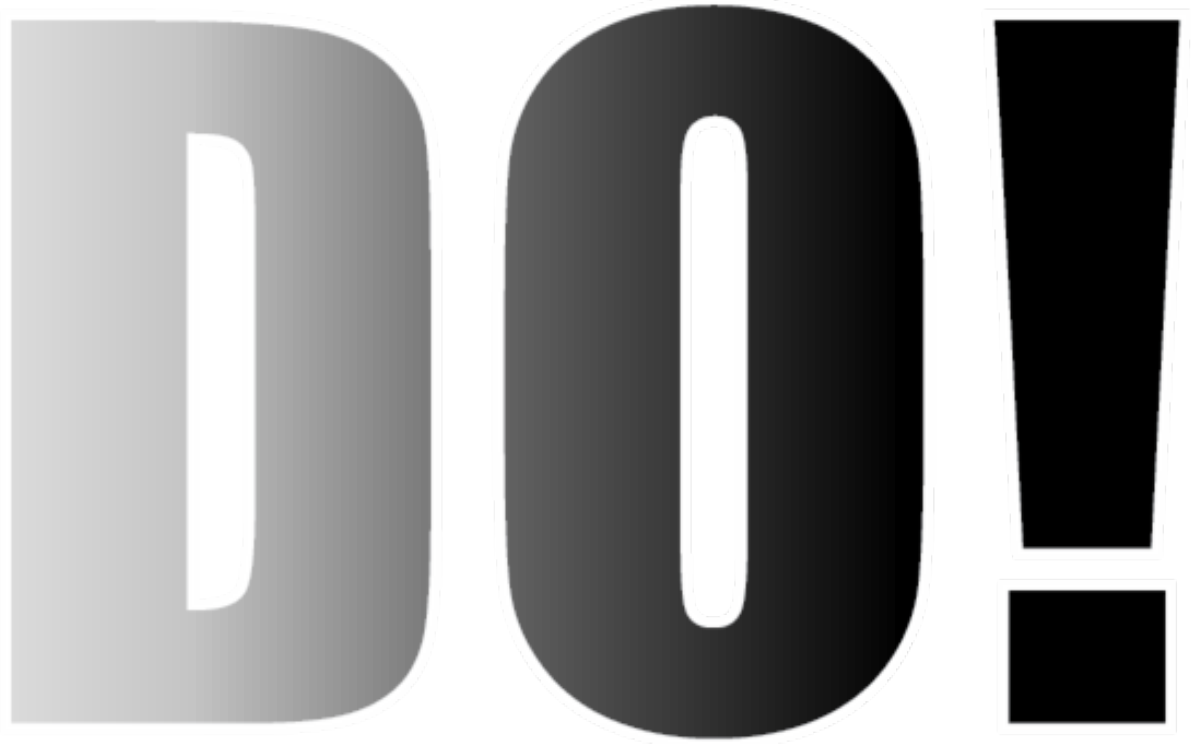
Follow - up

- Review information received from examining professional
- Rescreen after medical treatment if indicated
- Collaborate with special education personnel if

students to raise right or left hand

- Don't get into a pattern with your presentation of the tone
- Don't give visual cues-position audiometer controls out of view
- Don't screen ear with known hearing loss
- Don't switch the headphones from one audiometer to another. This changes the calibration for your

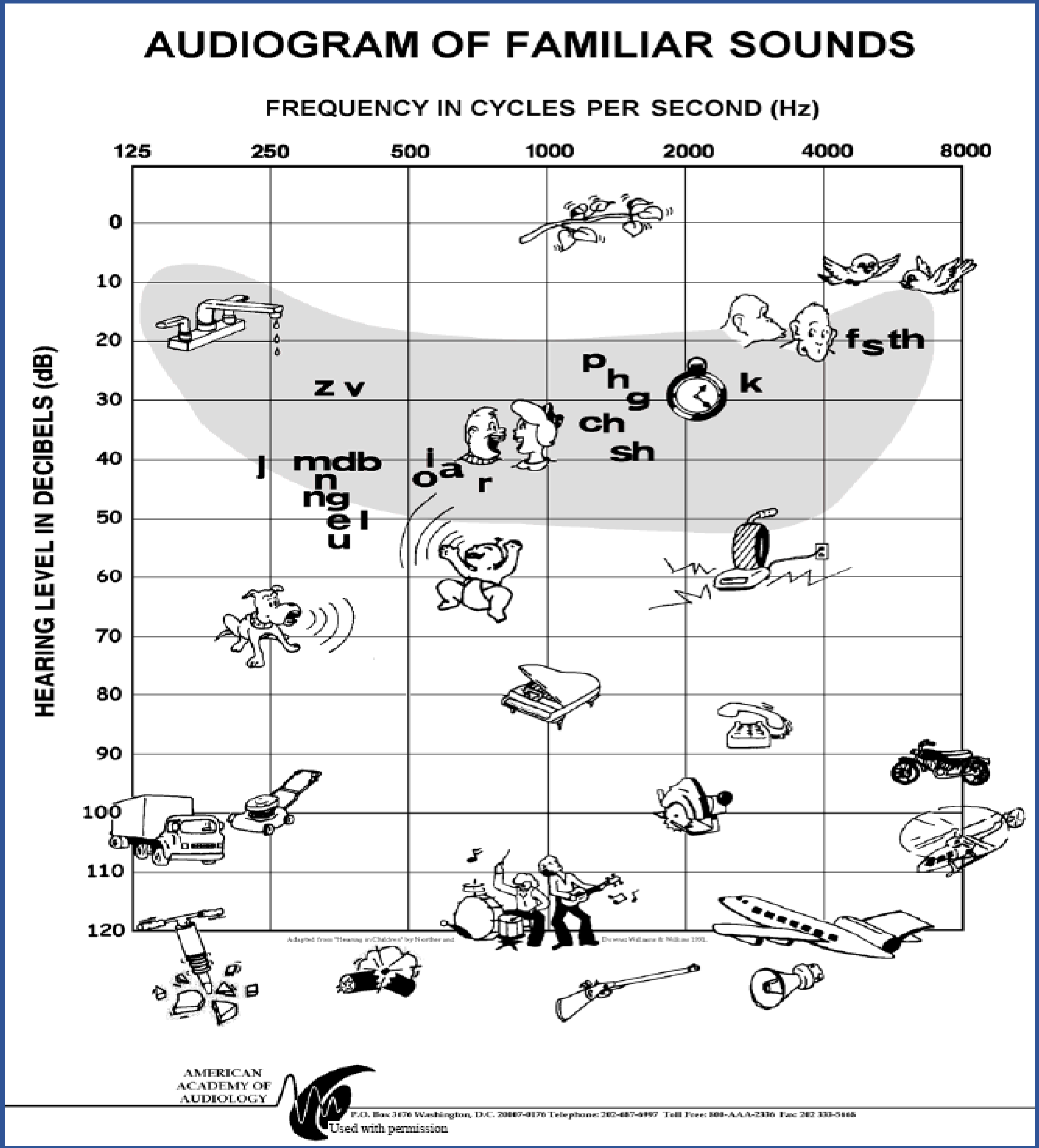
- DO find a quiet room
- DO screen at 20 dB HL
- DO present tone for at least 3 seconds
- DO use pulsed tones if possible



Amplification

Hearing aids and FM systems

- Be sure to have someone designated in the IEP to do daily listening checks and change batteries (as needed) and contact someone (parent, special education teacher) if a problem arises.


AUDIOGRAM OF FAMILIAR SOUNDS
FREQUENCY IN CYCLES PER SECOND (Hz)
125 250 500 1000 2000 4000 8000
HEARING LEVEL IN DECIBELS (dB)
0 10 20 30 40 50 60 70 80 90 100 110 120
z v
j mdb n ng e l u
i o a r
p h g ch sh
k
f s th
AMERICAN ACADEMY OF AUDIOLOGY
Used with permission

Observational Hearing Loss

Observational Screening for Hearing Problems

Techniques for screening are indicated below and are intended for use in a well-baby clinic, physician's office, parent's home, or for children who can't be conditioned to an audiometer. The screener should be trained to do the observational screening and have the appropriate materials.

- Select a quiet room for screening with little distraction from the outside.
- Have several noisemakers available – squeeze toys, bells, rattles, etc. Select these carefully to provide a variety of pitch and intensity levels.
- Seat the mother on a chair with the child on her lap. A colorful toy should be available as a distraction, but it should not be too attractive or it will engage the entire attention of the child.
- The screener kneels at a 45-degree angle to the side of the child, with the distracting toy in one hand and the noisemaker well hidden in the other. When the toy held in from of him engages the baby's attention, the screener makes a sound with the noisemaker in the hand, held close to the floor, out of the peripheral vision of the child. If an orientation response is seen after one or two presentations of the sound, the screener moves to the other side. The screener will learn by experience that for the 0 to 4 month age level, the noisemaker must be presented loudly, by 6 to 9 months, it can be presented more softly; and by 10-12 months, it should

Screening Form

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Individual Screening Form

Name		Grade
Date		Decibels
Frequency	Right	Left
1,000		
2,000		
4,000		

Tracking Form

SAMPLE: Tracking Form
HEARING SCREENING

STUDENT	GRADE/ ROOM	RE-SCREEN DATE	RESULTS	TYMP SCREEN/ RESULTS	REFERRAL DATE	COMMENT REGARDING REFERRAL COMPLETION

Screening Evaluation

HEARING SCREENING PROGRAM

SAMPLE: Statistical Report
(Internal Use)

School Year _____

Building Summary Report _____
District Summary Report _____

Building/District _____ Form completed by _____ Date _____

					RESULTS OF PROFESSIONAL EXAMINATION OF REFERRED STUDENTS						
	SCREENED		RE-SCREENED		Diagnosis			Recommended Treatment			
Grade	Total Number of Students	No Problem Found	No Referral At This Time	Referred For Professional Examination	Normal (No Abnormality)	Medical Problem	Audiological Problem	Observation	Med	Surgery	Other

For additional information on hearing screening visit the Online Hearing Screening Manual at: http://health.mo.gov/living/families/schoolhealth/pdf/hearingscreeningguidelines.pdf