

Again, it is the relationship of the PV to the other immittance values that determines its significance. PV is irrelevant in the presence of normal TM compliance and normal MEP but significant when MEP and TM compliance are abnormal. It is critical for you to understand how your particular piece of equipment (immittance bridge) obtains and displays data (results).

When it is necessary to communicate screening results to parents or physicians either verbally or in writing keep in mind that immittance screening does not allow a medical diagnosis to be made – that is done by the physician. Appropriate phrases include: “Immittance measurements suggest....”; “Results are consistent with...”; “...support the presence of...”

## THE AUDIOGRAM

This section is included to help you interpret audiograms and reports you receive from other facilities. A basic knowledge of the audiogram should facilitate your communication with audiologists and with families and teachers.

An audiogram is a graphic representation of a person’s hearing at a specific point in time. For children with conductive hearing loss, audiograms can be different from one evaluation to the next due to fluctuations in hearing. As you use the IEP/IFSP process to plan for children you should have current audiological information. For infants with sensorineural hearing loss hearing should be evaluated every 3-4 months for the first year after identification, at least twice a year through the preschool years and, at a minimum, annually after entering school. The purpose of close audiological monitoring is to identify progressive hearing loss.

In the past young children were tested in sound field. The child sat on a parent’s lap inside a sound proof booth with a speaker on either side. As stimuli were presented via the speakers and the child turned toward the signal she/he was reinforced with a blinking light. The technique, called Visual Reinforcement Audiometry (VRA) does not provide ear specific information; it only tests the better ear if in fact there is a difference. If you are referring a child because they failed the OAE component of the hearing screening **you should expect and request ear specific information from the audiological assessment.**



conduction thresholds identify a hearing loss and the bone conduction thresholds are the same as those obtained by air conduction, the hearing loss is sensorineural.

Previously, degree of hearing loss was categorized as follows: normal, 0-15; minimal, 16-25; mild, 26-40 dB; moderate, 41-55 dB; moderately severe, 56-70dB; severe, 70-90 dB; and profound, 90+ dB. So, what does it mean if a report says the child has a moderate hearing loss? It simply means that if you take a brief look at the audiogram and most of the thresholds are between 41 and 55 dB the hearing loss is described as moderate. Regardless of how imperfect this classification system might be it is still commonly used.

Because research has shown thresholds of 15 dB are necessary to adequately hear and acquire speech and language the term “educationally significant” is now used to describe milder degrees of hearing loss. The audiological criteria for educationally significant hearing loss can be any of the following:

- 1) An average pure tone hearing loss in the speech range (500-2000 Hz) of at least 20 dB in the better ear.
- 2) An average high frequency pure tone hearing loss of at least 35 dB in the better ear for two or more of the following frequencies: 2000, 4000, or 6000 Hz.
- 3) A permanent unilateral hearing loss of 35 dB or greater.

The audiogram in Figure 6 is referred to as the **Familiar Sounds Audiogram** and it identifies environmental sounds and speech sounds at the approximate loudness and pitch at which they normally occur. It may be helpful to you (and the teachers and families you work with) to transfer the threshold information from an audiologist’s audiogram onto the Familiar Sounds Audiogram. By doing so you have a visual representation of what the child can and cannot hear. Environmental and speech sounds appearing above the thresholds are too soft to be heard (inaudible) and sounds appearing below the thresholds are loud enough to be heard (audible).

Most audiograms include a Pure Tone Average (PTA), a Speech Reception Threshold (SRT), Speech Discrimination Scores (SDS) and test reliability indication. This information is related to the pure tone thresholds and will assist you in understanding audiological reports.

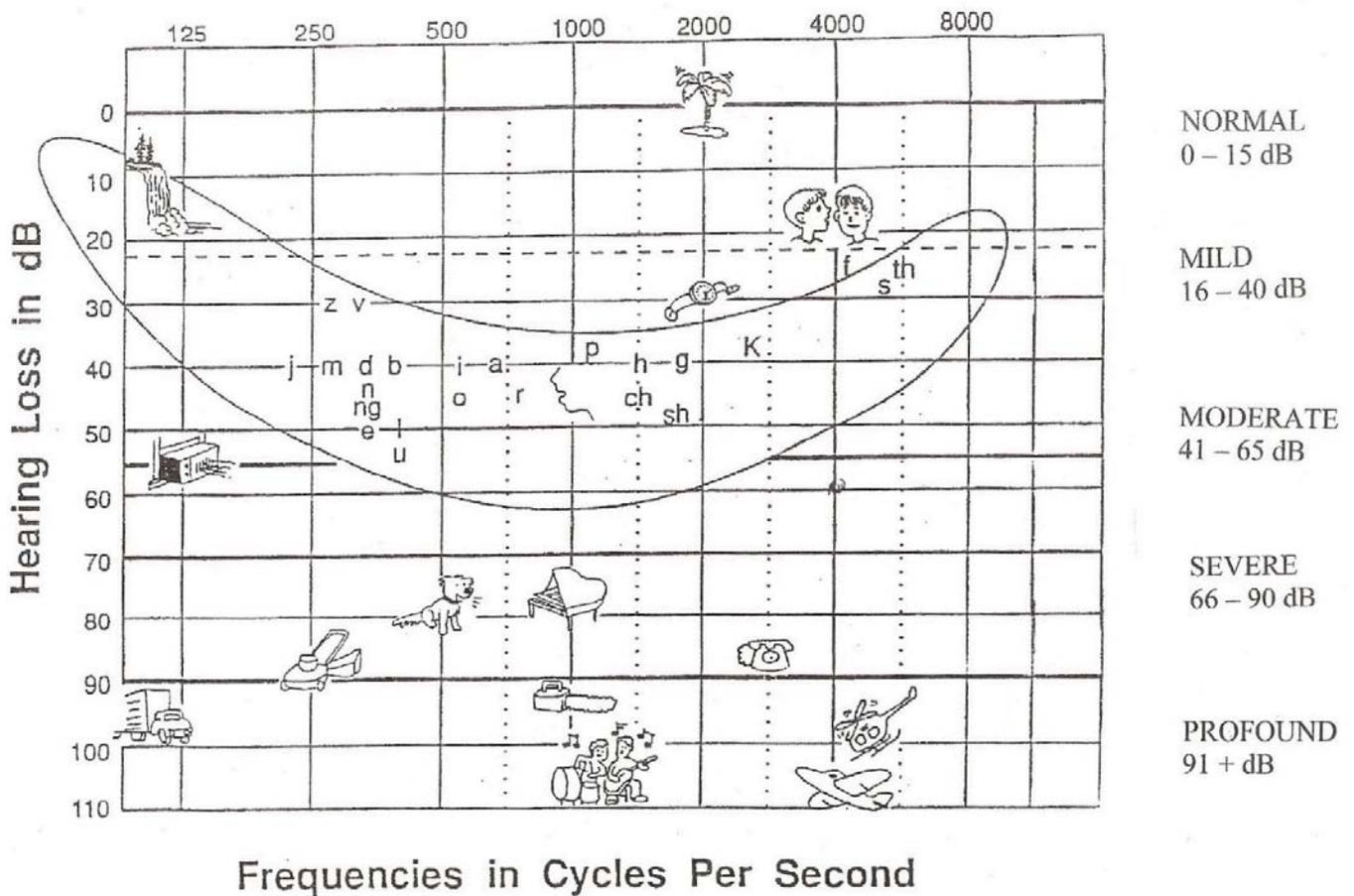


Fig. 6 Familiar Sounds Audiogram  
 Comparison of the Frequency and Intensity of  
 Various Environment and Speech Sounds

Pure tone average (PTA) is computed by averaging the thresholds in each ear at 500, 1000, and 2000 Hz or in the case of a high frequency hearing loss, 500 and 1000 Hz may be used. Example: If the thresholds at 500, 1000, and 2000 Hz are 40, 40, and 50, respectively, the PTA is 43 ( $40+40+50=130/3=43$ ). A phrase such as "Johnny has a 40-45 dB hearing loss" is derived from the PTA.

A Speech Reception Threshold (SRT) is the softest level an individual can identify 50% of the two syllable words presented. Older children simply repeat words such as 'cowboy,' 'hot dog,' 'airplane,' and younger children may point to pictures. An individual's ability to hear this type of word (known as a spondee) is directly related to their thresholds in the lower-to-middle frequencies (500-2000 Hz).

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