

Keys to Understanding Audiological Terms:

Acoustic feedback the high pitched whistling noise noted when amplified sound from a HA recycles itself back into the microphone of an amplifying system often heard from a hearing aid or a public address system

Acoustical Impedance an assessment tool used to evaluate the function of the middle ear and to identify middle ear problems such as the presence of fluid and the status of the eardrum through a non-invasive and computerized technique.

Analog Hearing Aids can be conventional or programmable. A conventional analog hearing aid allows an audiologist to set the volume. Other specifications are set by the manufacturer in a conventional analog hearing aid. In a programmable analog hearing aid, the audiologist uses a computer to program the aid. The circuitry will accommodate more than one program and the audiologist can program the hearing aid across different listening conditions.

Audiogram the graph used to plot hearing sensitivity at different frequencies. Intensity, how loud or how soft a sound is, is recorded from top to bottom. Frequency, how low to how high, is recorded from left to right. The frequencies in the human speech spectrum from 150 Hz to 8000 Hz are typically tested and displayed on an audiogram.

Auditory analysis the synthesis or processing of sound or a speech signal

Auditory Association to identify, to recall and to remember a sound with its source.
Ex: cat “meow” car “vroom”

Auditory attention to become aware of and to attend to the presence of sound.

Auditory awareness to be aware of and to respond to auditory signals, environmental sounds and speech.

Auditory Blending the process of taking individual speech sounds or phonemes and blending these phonemes into words

Auditory Closure the ability to understand the whole word or message when part is missing

Auditory comprehension the understanding of spoken language in meaningful applications

Auditory Discrimination to discriminate among sounds and words that are acoustically contrastive and acoustically similar. Ex of contrastive speech sounds: shh! Vs bow-wow similar speech sounds: lah lah lah vs waa waa!

Auditory Feedback to attend to and to monitor information through the auditory channel

Auditory figure ground the ability to identify and attend to a speaker in the presence of background noise, a competing verbal message, or auditory stimuli

Auditory Memory: to remember and to recall auditory stimuli of different lengths or number

Auditory Sequential Memory: to recall in a specific given order, “first I heard you say _____, and then I heard _____.”

Auditory Processing the ability to take units of auditory information, ie speech sounds, words, phrases and sentences and to meaningfully apply these units of auditory information

Auditory tracking the skill of following along given a text book or printed reading material when read aloud by someone else or in a conversation

Auditory Understanding to comprehend and synthesize the global meaning of spoken language. Spoken language information is stored and retrieved as it relates to known information

Auditory BrainStem Evoked Response ABR An assessment tool used in hospitals and clinics to identify hearing loss that can be conducted on newborns and infants while they are sleeping. Sounds (clicks) are presented through earphones while the baby rests quietly or sleeps. Brainstem responses to sound are measured through small electrodes that are taped on the baby's head. These responses are processed by a computer.

Otoacoustic Emissions OAE's: a small probe inserted into a baby's ear while resting or sleeping, that measures the function of the inner ear or cochlea

Behavioral testing: assessment utilized to condition a response behaviorally to an acoustic signal

Behind the Ear Hearing Aids: hearing aids that fit behind the ear and are frequently used with pediatric patients due to the tendency to match the physical characteristics of infants and young children.

In the Ear Hearing Aids: are hearing aids that fit completely in the outer ear. The case must be replaced as the ear grows. These hearing aids are not typically fit for pediatric patients. This hearing aid is most often used to fit adults with a mild to a severe hearing loss.

In the Canal Hearing Aids: are hearing aids that fit in the ear canal and are customized to fit the size and shape of the user's ear canal. These hearing aids must be replaced as they ear grows and are often used for pediatric patients.

FIG. 1 TYPES OF HEARING AIDS



Compression: limiting an incoming acoustic signal by reducing the amplitudes of incoming sound waves while maintaining the frequencies of the original waveform as a means of controlling intensity.

Corner Audiogram: term used to describe the presentation of an audiogram in which only very loud, low pitched sounds, are detected without amplification as in a profound hearing loss.

Decibel db: a standardized unit of measure that is used to demonstrate the relationship between two sounds and how they differ in pressure or power. A decibel is approximately equal to the smallest variation in loudness psychologically detected by normal hearing. Intensity is expressed in a logarithmic unit, the decibel which is one tenth of a bel.

Detection: to behaviorally indicate the presence of a sound

Digital Hearing Aids are programmable hearing aids that your audiologist uses a computer to program based on your child's hearing loss. Digital hearing aids use a computer chip and offer the most flexibility in programming amplification of incoming sound in specific frequencies that are difficult to hear. Digital circuitry is the most expensive circuitry utilized in hearing aids.

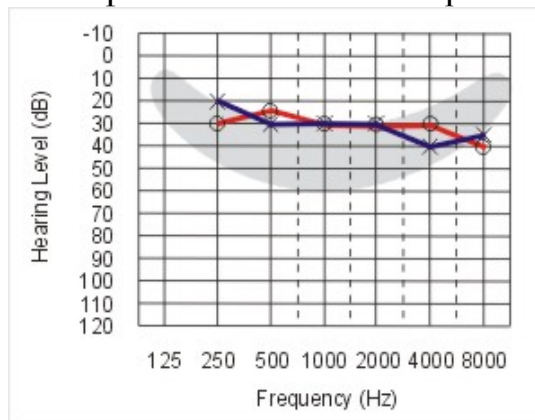
Distance Hearing: to listen to and attend to sounds, speech and environmental sounds at distances

Frequency: the number of vibrations of cycles per second in a sound. The physical frequency properties of sound waves influence a person's psychological perception of pitch. Higher frequencies result in higher pitch perception.

Hertz: the mathematical current unit of measure in which frequency or cycles per second are measured. Sound waves per second are calculated.

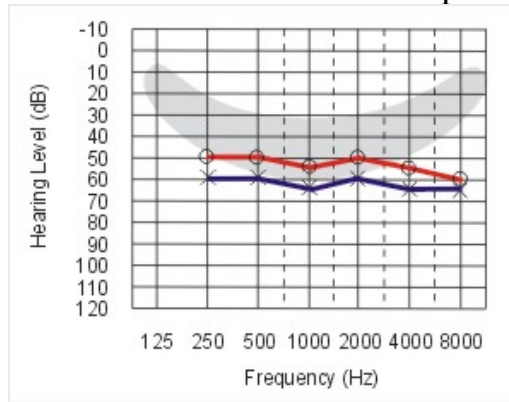
Hearing Loss: the audiological description of the degree of hearing sensitivity that deviates from normal hearing conveying the results of clinical audiometry which assess and measures a person's ability to hear and understand speech

Mild Loss: can not hear a whispered conversation in a quiet atmosphere at close



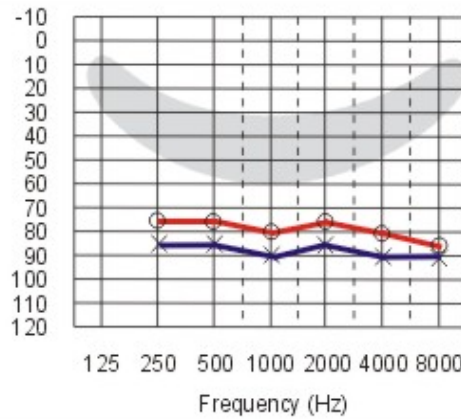
range 15-40 dB loss

Moderate Loss: cannot hear normal conversation in a quiet atmosphere at close

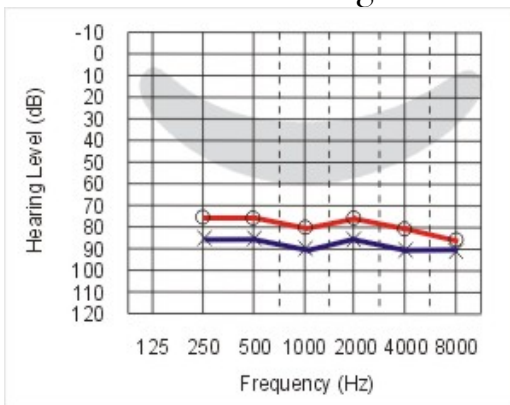


range 40-60 dB loss

Severe Hearing Loss: cannot hear speech; can only hear loud noises for example a vacuum cleaner, lawn mower, at close distances 60-90 dB loss



Profound Hearing Loss: cannot hear speech; may lonely hear very loud noises such as a chain saw at close range or the vibrating component of a loud sound



Mixed Hearing Loss: a hearing loss characterized by a conductive component and a sensorineural component. The child with a conductive loss will have difficulty receiving and analyzing a sound signal.

Conductive Hearing Loss: when air conduction scores are 10 db greater than bone conduction scores there is said to be a conductive component in a hearing loss. A conductive component can be classified as one being caused by dysfunction in the outer ear or the middle ear. Abnormalities may include an accumulation of hardened wax, cerumen, the presence of a foreign body, and structural malformations such as an incomplete ear canal or an exceedingly small ear canal. The external ear can be inflamed by disease processes that effect the surrounding skin surfaces. Middle ear malfunction can include: impaired vibratory function of the ossicles, infections of the middle ear, excessive fluid or enlarged adenoidal tissue in the area of the nasopharynx.

Sensorineural Hearing loss: is caused by dysfunction in the inner ear or along the eighth cranial/auditory nerve. Reception and perception of sound is impaired.

Congenital Hearing Loss: a hearing loss characterized by an onset prior to birth

Acquired Hearing Loss: a hearing loss characterized by an onset after the development of oral language skills

Intensity: the degree of loudness measured in decibels

Identification: to remember, recall and to label a sound or a word heard with a verbal label or a physical point to a picture

Localization: to attend to, turn to and identify the physical direction of the source of environmental sounds or speech stimuli.

Pitch: a psychological response to the physical frequency of sound waves

Pure Tone: a note with only one frequency, no harmonics or overtones

Pure Tone Average: the average of the sensitivity levels typically measured at 500, 1000, and 2000 Hz.

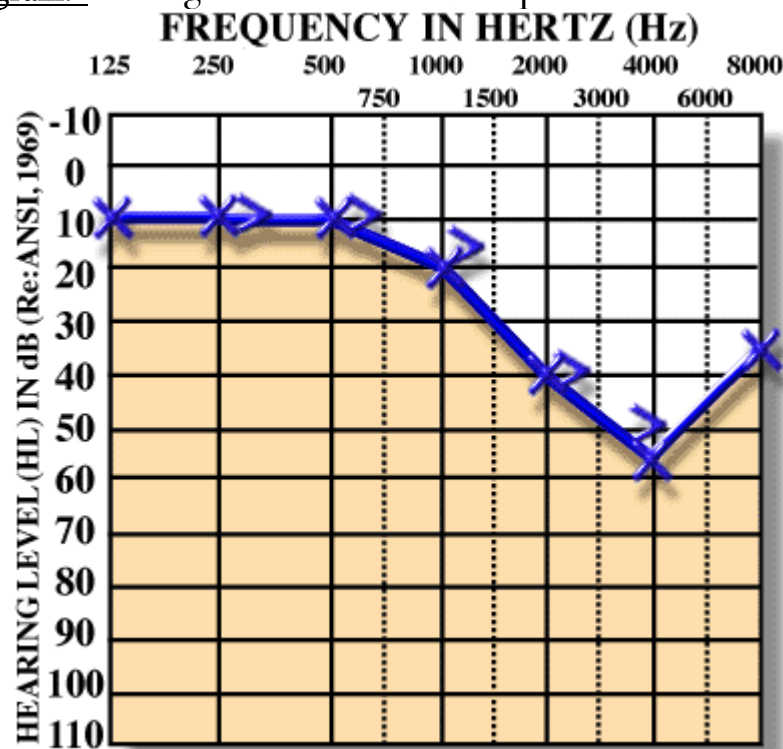
Speech Reception Threshold: the threshold of intelligibility is the level measured in dB at which a listener is just able to identify 50% of spondee words.

Speech Detection Threshold: the threshold that is simply the level at which a listener is able to detect the presence of a speech signal about one half of the time

Speech Perceptibility Threshold: the level that a listener is able to understand a message with effort. This is obtained by using a sample of continuous discourse.

Signal to noise ratio: the intensity relationship between a sound of interest to a distracting sound such as broadband noise.

Sloping audiogram: Hearing is better in the low frequencies than in the high



frequencies.

Rising audiogram: Hearing is better in the high frequencies than in the low frequencies

Flat audiogram: Hearing loss remains essentially the same at all frequencies.

Progressive Hearing Loss: hearing loss gradually worsens or deteriorates over a period of time

Fluctuating Hearing Loss: hearing loss fluctuates and is not stable

