

Glossary

ABR Evaluation (Diagnostic): Auditory Brainstem Response measure used to predict hearing sensitivity and to assess the integrity of the auditory nerve and auditory brainstem structures. Other terms used include brainstem auditory evoked potential (BAEP, and brainstem auditory evoked response (BAER). Conventional ABR devices generate waveforms that the audiologist then interprets to determine the presence, type and configuration of a hearing loss.

ABR Screening: Computerized screening of the inner ear and auditory brainstem structures. An internal algorithm compares incoming data to a statistical metric in order to internally determine whether a response is present yielding a “pass” or “refer” result.

Acoustic Reflex (Testing)*: (Measurement of) the reflexive contraction of the intra-aural muscles in response to loud sound, dominated by the stapedius muscle in humans.

American Sign Language: ASL is a visual and manual language made up of signs created with the hands, facial expressions, and body posture and movement. ASL conveys ideas, information, and emotion with as much range, complexity, and versatility as spoken languages and is considered to be the essential link to Deaf Culture among the American Deaf community.

Assistive Listening Device (ALD)*: Hearing instrument or class of hearing instruments, usually with a remote microphone for improving signal-to-noise ratio, including FM system, personal amplifiers, telephone amplifiers, television listeners.

Atresia (external auditory canal atresia, aural atresia): An ear malformation in which there is an absence of the external ear canal, usually with abnormalities of the outer ear, and/or middle ear space.

Audiological Evaluation (Diagnostic Audiometry)*: Measurement of hearing to determine the nature and degree of hearing loss.

Audiologist*: Healthcare professional who is credentialed in the practice of audiology to provide a comprehensive array of services related to prevention, evaluation and rehabilitation of hearing loss and its associated communication disorders.

Auditory Nerve*: Cranial Nerve VIII, consisting of a vestibular and cochlear branch.

Auditory Neuropathy/Dys-synchrony: A condition in which patients demonstrate normal otoacoustic emissions (suggesting normal outer hair cell function of the cochlea) and absent or grossly abnormal ABRs (suggesting a neural disorder).

Auditory Steady State Response (ASSR): Auditory Steady State Response (ASSR) is an objective test used for evaluation of hearing ability in children too young for traditional audiometric testing. The results obtained from ASSR testing can be used to estimate the behavioral pure-tone audiogram. Often, testing is performed under sedation or in natural sleep if the person is under 6 months of age. Results are obtained by measuring brain activity while the person listens to tones of varying frequency (pitch) and intensity (loudness). The brain activity is recorded using electrodes taped on the forehead and behind each ear. The results are detected objectively using statistical formulas that determine the presence or absence of a true response. Threshold is determined as the lowest level at each frequency at which a response is present.

Bilingual-Bicultural: Bilingual-Bicultural education of deaf and hard-of-hearing children encourages children to use American Sign Language as their first language and English as their second.

Bone Anchored Hearing Aid (BAHA)*: Surgically implanted bone-conduction receiver that interfaces with an external amplifier, designed to provide amplification for those with intractable middle ear disorders.

Bone Conduction: The transmission of sound through the bones of the skull to the inner ear. Bone conduction is completed using a bone oscillator (vibrator) that is placed on the mastoid bone behind the ear or on the forehead.

Central Auditory Processing Disorder (CAPD)*: Disorder in function of central auditory structures, characterized by impaired ability of the central auditory nervous system to manipulate and use acoustic signals, including difficulty understanding speech in noise and localizing sounds. Individuals with CAPD have difficulty following spoken instructions and usually show other language-learning problems even though the inner ear is functioning normally.

Click:** A rapid onset, short duration, broad-band sound produced by delivering an electrical pulse to a transducer.

Cochlea*: Auditory portion of the inner ear, consisting of fluid-filled membranous channels within a spiral canal around a central core.

Cochlear Implant*: Device that enables persons with profound hearing loss to perceive sound, consisting of an electrode array surgically implanted in the cochlea, which delivers electrical signals to the auditory nerve and an external amplifier, which activates the electrode.

Cochlear Implant Mapping*: Representation of the threshold and suprathreshold parameters for each electrode or electrode combination in an individual cochlear implant user's speech-coding program.

Conductive Hearing Loss*: Reduction in hearing sensitivity, despite normal cochlear function, due to impaired sound transmission through the external auditory meatus, tympanic membrane and ossicular chain.

Conscious Sedation*: Sedated state wherein the patient retains protective reflexes and breathes independently commonly attained with chloral hydrate.

Cued Speech: Cued Speech is a communication method, which uses hand shapes and positions to represent the essential sounds of spoken language.

Desired Sensation Level* (DSL): Number of decibels above behavioral threshold required to amplify the long-term speech spectrum to a prescribed level across the frequency-range.

Developmental Screening: A procedure designed to identify children who should receive more intensive assessment or diagnosis, for potential developmental delays. It can allow for earlier detection of delays and improve child health and well-being for identified children. Screening tools can be specific to a disorder (for example, autism), an area (for example, cognitive development, language, or gross motor skills), or they may be general, encompassing multiple areas of concern. Examples of Developmental Screening Tools include the ELF, the Meadow-Kendal Social-Emotional Assessment Inventories for Deaf and Hearing impaired Students.

Distortion Product Otoacoustic Emission (DPOAE): Refers to a computerized screening of the outer hair cells in the cochlea. Two tones are presented into the baby's ear via a probe which is placed at the opening of the ear canal. A small microphone is also in the probe which measures the echo that is returned from the baby's ear in response to the presentation of the two tones.

DSL Prescriptive Procedure*: Method of choosing gain and frequency response of a hearing aid so that the long-term spectrum of speech is amplified to the desired sensation levels, estimated across the frequency range from audiometric thresholds.

Earmold*: Coupler formed to fit into the auricle that channels sound from the earhook of a hearing aid into the ear canal.

Electroacoustic analysis (of hearing aids): Electronic measurement of various parameters of the acoustic output of a hearing aid.

External Auditory Canal Atresia (aural atresia): Absence of the opening to the external auditory meatus, usually with abnormalities of the outer ear and middle ear space.

Functional Auditory Assessment: Functional auditory measures evaluate listening behavior in real world settings and may also serve as a validation mechanism to document development of auditory skills. Information from these tests may reveal how listening behavior might change in different settings, under different conditions, or with different speakers. Example of functional auditory assessment tools include: the Functional Listening Evaluation, the SIFTER, the Pre-school SIFTER, the Children's Home Inventory of Listening Difficulties (CHILD), the Family Expectation Worksheet, the Early Listening Function (ELF), the Meaningful Auditory Integrations Scale (MAIS), the Infant-Toddler MAIS, the Meaningful Use of Speech Scale (MUSS), the Functional Auditory Performance Indicators (FAPI), the Screening Instrument for Targeting Educational Risk in Preschool Children.

Genetic Counseling*:** The educational process that helps individuals, couples, or families to understand genetic information and issues that may have an impact on them. It helps them comprehend the diagnosis, prognosis, recurrence risks and reproductive choices to make the best possible adjustment to the condition.

Hearing Aid*: Any electronic device designed to amplify and deliver sound to the ear, consisting of a microphone, amplifier, and receiver.

Hearing Aid Dispenser: A hearing aid dispenser is someone who is licensed by the state to measure hearing and to fit and sell hearing aids.

Hearing Aid-Analog*: Amplification device that uses conventional, continuously varying signal processing.

Hearing Aid-Bone Conduction*: Hearing aid in which amplified signal is delivered to a bone vibrator placed on the mastoid, thereby bypassing the middle ear and stimulating the cochlea directly.

Hearing Aid-Digital*: Hearing aid that processes a signal digitally.

Hearing Aid-Vibrotactile*: Device designed for profound hearing loss in which acoustic energy is converted to vibratory energy and delivered to the skin.

Hearing Screening (Identification Audiometry)*: Testing designed to screen the hearing of large numbers of individuals, such as neonates and school age children, with the goal of identifying those who need more comprehensive audiologic assessment.

Insert Earphone*: Earphone whose transducer is connected to the ear through a tube leading to an expandable cuff that is inserted into the external auditory meatus.

Microtia: Abnormal growth of the outer ear. Severity varies from minor skin tags or differences in ear shape to complete absence of the outer ear.

Mixed Hearing Loss*: Hearing loss with both a conductive and a sensorineural component.

Otitis Media*: Inflammation of the middle ear resulting predominantly from Eustachian tube dysfunction.

Otolaryngologist (ENT Physician)*: Physician specializing in the diagnosis and treatment of diseases of the ear nose and throat, including diseases of related structures of the head and neck.

Otoscope*: A speculumlike instrument for visual examination of the external auditory meatus, external auditory canal and tympanic membrane.

Otoscopy*: Inspection of the external auditory meatus and tympanic membrane with an otoscope.

Otoscopy, Pneumatic*: Inspection of the motility of the tympanic membrane with an otoscope capable of varying air pressure in the external auditory meatus.

Pass: A “pass” result on a hearing screening suggests that hearing is adequate for normal speech and language development.

Pediatric Audiology*: Audiology subspecialty devoted to the study, evaluation and treatment of hearing disorders in children.

Play Audiometry*: Behavioral method of hearing assessment of young children in which the correct identification of a signal presentation is rewarded with the opportunity to engage in any of several play oriented activities.

Pressure-Equalizing (PE) Tube: Also called a tympanostomy tube; a tube that is inserted in the eardrum to equalize the pressure between the middle ear and the ear canal and to permit drainage.

Probe Microphone Measurements: Electroacoustic assessment of the characteristics of hearing aid amplification near the tympanic membrane using a probe microphone. These measurements represent a repeatable and reliable method of assessing the real-ear performance of hearing instruments to determine what is actually occurring in a patient’s ear while they are wearing their hearing aid.

Pure Tone Audiometry*: Measurement of hearing sensitivity threshold to pure tone stimuli by air and bone conduction.

Real Ear to Coupler Difference (RECD): The difference, in decibels and across frequencies, between the response of a hearing aid measured in a real ear versus a standard coupler. The RECD is a measure that allows the audiologist to accurately specify the sound levels delivered to the ears of infants and young children.

Refer: A refer result on a hearing screening indicates that further evaluation is needed determine whether or not a hearing loss is present in either ear.

Risk Indicator (Risk Factor)*: Health, environmental and lifestyle factors that enhance the likelihood of having or developing a specific disease or disorder. In regards to universal hearing screening, Risk Indicator refers to any factor of the baby's health history that places them at risk for hearing loss.

Sensorineural Hearing Loss*: Cochlear or retrocochlear loss in hearing sensitivity due to disorders involving the cochlea and/or the auditory nerve fibers of Cranial Nerve VIII.

Sign Language Interpreters (Qualified): Sign Language/spoken English interpreters are highly skilled professionals. They must be able to listen to another person's words, inflections and intent and simultaneously render them into the visual language of signs using the mode of communication preferred by the Deaf consumer. The interpreter must also be able to comprehend the signs, inflections and intent of the Deaf consumer and simultaneously speak them in articulate, appropriate English. They must understand the cultures in which they work and apply that knowledge to promote effective cross-cultural communications. The Americans with Disabilities Act requires the provision of qualified interpreters in a variety of settings. It states that "To satisfy this requirement, the interpreter must have the proven ability to effectively communicate..." One important measure of an interpreter's proven ability is professional credentials. Credentials are obtained by taking and passing an assessment of an individual's interpreting skills. The National Registry of Interpreters for the Deaf (RID) provides testing for national certification. Assessments by the National Association for the Deaf (NAD) and other state agencies may also be accepted by employers. (Citation: The Registry of Interpreters for the Deaf website).

Sound field testing* In pediatric audiometry or hearing aid fitting, the determination of hearing sensitivity or speech recognition ability made with signals presented in a sound field through loudspeakers.

Speech Audiometry*: Measurement of the hearing of speech signals; includes measurement of speech awareness, speech reception, word and sentence recognition, sensitized speech processing and dichotic listening.

Speech Language Pathologist: A professional who evaluates and provides treatment for speech, language, cognitive-communication, and swallowing problems of children and adults.

Tangible Reinforcement Operant Response Audiometry (TROCA)*: Audiometric technique that uses a mechanical box from which the child or mentally disabled patient receives reinforcement, usually in the form of candy or cereal, for the correct identification of a signal presentation.

Toneburst**: Signals having a rise time, plateau time, and fall or decay time of sufficient duration to be perceived as having tonal quality.

Transient Evoked Otoacoustic Emission (TEOAE)*: Low-level acoustic echo emitted by the cochlea in response to a click or transient auditory stimulus; related to the integrity and function of the outer hair cells of the cochlea.

Tympanometry*: Procedure used in the assessment of middle ear function in which the immittance (energy flow) of the tympanic membrane and middle ear is measured as air pressure delivered to the ear canal is varied.

Tympanometry (High-Frequency): The development of multi-frequency tympanometry devices has made it possible to record tympanograms across a wide range of probe-tone frequencies. Several studies indicate that the most informative tympanometric recordings in neonates are derived using higher probe tone frequencies (1000 Hz) and are the best predictors of the presence of non-compliant middle ear system.

Vernix*: Fatty substance covering the skin of a fetus (sometimes present in infant's ear canal at the time of newborn hearing screening).

Visual Reinforcement Audiometry (VRA)*: Audiometric technique used in pediatric assessment in which a correct response to signal presentation, such as a head turn toward the speaker, is rewarded by the activation of a light or lighted toy.

Definitions marked with an asterisk () were obtained from the Comprehensive Dictionary of Audiology, by Brad A. Stach, Williams and Wilkins (1997).

** Definitions marked with two asterisks (**) were obtained from the Clinical Applications of the Auditory Brainstem Response, by Linda J. Hood, Singular Publishing Group (1998).

*** Definitions marked with three asterisks (***) were obtained from the Genetic Information and Patient Services, Inc. (GAPS).