Anthem

Clinical UM Guideline

Subject: Auditory Brainstem Responses (ABRs) and Evoked Otoacoustic Emissions (OAEs) for Hearing Disorders
Guideline #: CG-MED-49 **Publish Date:** 06/28/2023
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Description

This document addresses the use of auditory brainstem responses (ABRs) and evoked otoacoustic emissions (OAEs) for the evaluation of hearing disorders. This document does not address ABR or OAE for neurologic conditions, such as multiple sclerosis (MS), or when used as part of intra-operative monitoring (for example, during surgery for acoustic neuroma).

ABR and OAE testing are noninvasive methods used to detect hearing disorders. OAE measures the preneural status of the peripheral auditory system to the outer hair cells of the inner ear (cochlea). OAE may be used to assess hearing disorders as the result of cochlear dysfunction or detect irregularities to the pathway of the inner ear. ABR measures the neural status of the cochlea, the auditory nerve, and may be used to assess auditory neuropathy. ABR testing may be used to evaluate central nervous system pathology such as eighth cranial nerve dysfunction caused by vascular compression or tumors and brainstem dysfunction. ABR is also referred to as auditory evoked response (AER), auditory evoked potential (AEP), brainstem evoked auditory potential (EAP), brainstem auditory evoked potential (BAEP), brainstem auditory evoked response (BAER), and evoked response audiometry.

Clinical Indications

Medically Necessary:

Automated auditory brainstem responses (ABR), evoked otoacoustic emissions (OAE), or OAE followed by ABR testing is considered **medically necessary** to screen for hearing disorders for *any* of the following indications:

A. As initial screening for newborns and infants; **or**
B. Infants (age less than 1 year) admitted to an ICU for 2 or more days; **or**
C. Neonates during the 1st month of life when exposed to potential causes of hearing loss (for example, chemotherapy, hyperbilirubinemia that requires exchange transfusions, meningitis, or culture-positive sepsis); **or**
D. To screen for hearing disorders in infants and children when behavioral audiometry is not reliable related to, but not limited to, inability to cooperate with other methods of hearing testing; **or**
E. To screen for hearing disorders in children less than 36 months of age who passed the neonatal hearing screening test but are at risk of having sensorineural hearing loss; **or**
F. To monitor for ototoxicity in individuals undergoing treatment with an ototoxic agent (for example, aminoglycosides, chemotherapy agents, or heavy metals).

ABR with or without OAE testing is considered **medically necessary** to diagnose hearing disorders for *any* of the following indications:

A. To make a confirmatory diagnosis of a hearing disorder in infants and children (birth to 36 months) who did not pass the initial hearing screening; **or**
B. To evaluate infants and children suspected of having a hearing disorder when 1 or more of the following apply:
    1. Behavioral audiometry is not reliable, **or**
    2. Ear-specific thresholds cannot be obtained, **or**
    3. When results are inconclusive regarding the type, degree, or configuration of hearing levels; **or**
C. To assess suspected hearing disorders in individuals who are unable to cooperate in other methods of hearing testing (for example, behavioral audiometry); **or**
D. To evaluate in the diagnosis and monitoring of acoustic neuroma.

Not Medically Necessary:

ABR or OAE for hearing disorders is considered **not medically necessary** when the above criteria are not met.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services may be Medically Necessary when criteria are met:

CPT	
92558	Evoked otoacoustic emissions, screening (qualitative measurement of distortion product or transient evoked otoacoustic emissions), automated analysis *[screening test]*
92587	Distortion product evoked otoacoustic emissions, limited evaluation (to confirm the presence or absence of hearing disorder, 3-6 frequencies) or transient evoked otoacoustic emissions, with interpretation and report
92588	Distortion product evoked otoacoustic emissions; comprehensive diagnostic evaluation (quantitative analysis of outer hair cell function by cochlear mapping, minimum of 12 frequencies), with interpretation and report
92650	Auditory evoked potentials; screening of auditory potential with broadband stimuli, automated analysis
92651	Auditory evoked potentials; for hearing status determination, broadband stimuli, with interpretation and report

92652	Auditory evoked potentials; for threshold estimation at multiple frequencies, with interpretation and report
92653	Auditory evoked potentials; neurodiagnostic, with interpretation and report

ICD-10 Diagnosis

D33.3	Benign neoplasm of cranial nerves [specified as acoustic neuroma]
H90.0-H90.8	Conductive and sensorineural hearing loss
H90.A11	Conductive hearing loss, unilateral, right ear with restricted hearing on the contralateral side
H90.A12	Conductive hearing loss, unilateral, left ear with restricted hearing on the contralateral side
H90.A21	Sensorineural hearing loss, unilateral, right ear, with restricted hearing on the contralateral side
H90.A22	Sensorineural hearing loss, unilateral, left ear, with restricted hearing on the contralateral side
H90.A31	Mixed conductive and sensorineural hearing loss, unilateral, right ear with restricted hearing on the contralateral side
H90.A32	Mixed conductive and sensorineural hearing, unilateral, left ear with restricted hearing on the contralateral side
H91.01-H91.93	Other and unspecified hearing loss
H93.011-H93.93	Other disorders of ear, not elsewhere classified
H93.A1-H93.A9	Pulsatile tinnitus
P36.0-P36.9	Bacterial sepsis of newborn
P55.0-P55.9	Hemolytic disease of newborn
P58.0-P58.9	Neonatal jaundice due to other excessive hemolysis
R62.0	Delayed milestone in childhood
R94.120	Abnormal auditory function study
T36.0X1A-T36.96XS	Poisoning by, adverse effect of and underdosing of systemic antibiotics
T45.1X1A-T45.1X5S	Poisoning by, adverse effect of and underdosing of antineoplastic and immunosuppressive drugs
T56.0X1A-T56.94XS	Toxic effect of metals
Z01.110-Z01.118	Encounter for examination of ears and hearing with abnormal findings
Z82.2	Family history of deafness and hearing loss
Z86.69	Personal history of other diseases of the nervous system

When services are Not Medically Necessary:
For the procedure and diagnosis codes listed above when criteria are not met.

Discussion/General Information

ABR measurements reflect the status of the auditory (cranial) nerve and pathways and the peripheral auditory system. ABR responses allow for the identification of normal cochlear function and neurophysiological competency of the acoustic pathway in test subjects. The test involves placing electrodes on the scalp and earlobes. Auditory stimuli, such as tones or clicking noises are delivered to one ear. The sound stimulation moves through the outer ear (canal), through the middle ear (tympanic membrane and ossicles) to the inner ear (cochlea) where it is converted into nerve impulses. These impulses then travel through the vestibular and eighth cranial nerve to the brain. An electrical response from the brainstem is sensed by the electrodes that have been strategically placed on the subject's scalp. During automated ABR screening, this response is recorded and analyzed by a computer and the computer algorithm determines whether the subject passes or fails the screening. A non-automated ABR requires interpretation by an audiologist. A diagnostic ABR provides information such as "no response", thresholds prediction, auditory neuropathy, or central auditory brainstem abnormality. Individuals who fail the screening are usually referred for additional testing.

Otoacoustic emissions (OAEs) are physiologic measurements of the response of the cochlear outer hair cells to acoustic stimuli used to assess cochlear integrity and preneural function. This test only detects hearing disorders that affect the cochlea and the pathway to the inner ear. OAEs do not diagnosis hearing loss; they reflect inner ear mechanics and provide information that further defines the auditory system's condition and sensitivity. OAEs recorded in the absence of stimulation are known as spontaneous OAEs. OAEs that are recorded in response to auditory signals are known as evoked OAEs. OAE testing involves the insertion of a small probe into the ear canal, and the introduction of soft tones or click stimuli. The sound moves along the pathway from the outer ear, through the middle ear and into the cochlea. When the cochlea is functioning properly, an otoacoustic emission is produced that travels back out through the middle and the outer ear. This emission is calculated by the probe and analyzed by a computer. When an emission is adequate, "pass" is displayed on the monitor. In instances of dysfunction or blockage along the pathway to the cochlea, the equipment will be unable to measure the emission, and the monitor will display "fail" or "refer." When used in conjunction with ABR, OAEs assist in the differential diagnosis of cochlear hearing disorders and the identification of children with neurological dysfunction (AAA, 2020).

Two types of OAEs are generally performed in the clinical setting; transient evoked OAEs (TEOAEs) and distortion product OAEs (DPOAEs). TEOAEs are elicited with brief sounds (clicks or tone bursts) that have an intensity level of 80 dB SPL. TEOAEs reflecting cochlear (outer hair cell) activity are generally recorded across a frequency range of 500 to approximately 4000 Hz. In contrast, DPOAEs are elicited with sets of two pure tone frequencies that are closely spaced and presented simultaneously at an intensity level 55 and 65 dB SPL. DPOAEs can be recorded over the frequency region of 500 to 8,000 Hz and sometimes even higher frequencies. TEOAEs may be used to access cochlear function and to validate other tests. DPOAEs are generally used to assess cochlear damage, ototoxicity, and noise-induced damage.

Bone conduction ABR using a click stimulus provides a differential diagnosis for the type of hearing disorder if air conduction thresholds are elevated. It is one method of identifying infants who may have conductive hearing loss such as in cranial-facial anomalies (for example, aural atresia). According to the ASHA, when air-conduction thresholds obtained by behavioral or physiologic methods are found to be abnormal, estimates of bone-conduction sensitivity should be completed (ASHA, 2004).

Another auditory evoked potential test with emerging clinical applications is the auditory steady-state response (ASSR). This technology is being investigated as a method of estimating frequency-specific hearing sensitivity in individuals who cannot or will not provide reliable or valid behavioral thresholds (Dimitrijevic, 2002; Vander, 2002).

Screening

ABRs and OAEs provide physiologic measures that may be used to screen newborns, infants, young children, or individual of any age who cannot be evaluated for hearing disorders with behavioral techniques.

During neonatal screening, a limited (automated) ABR test is usually performed in the nursery using a low intensity level (35 to 40 dB). Infants who fail testing at this level are typically referred to an audiologic laboratory for a comprehensive ABR which involves testing measurements at several different intensity levels and frequencies.

OAEs can be measured in almost all individuals who have normal hearing sensitivity and normal functioning of the middle ear system provided that the ear canal is clear and the recording conditions are suitable. Evoked OAEs are generally not present in ears with hearing loss of a moderate degree or greater. The test causes no discomfort and only requires the subject to remain quiet and reasonably still for a few minutes. Because no behavioral response is required, the information can be obtained from individuals who are sleeping, comatose or not developmentally mature enough to provide a behavioral response to sound. OAE is particularly useful when screening is required in individuals under the age of 4 years when risk factors are present, and when the child is essentially unable to cooperate with a screening audiogram in the office. Uses for OAE include, but are not limited to, the screening of newborns, infants and children for hearing disorders, assisting in the diagnosis of hearing disorders in infants and children who did not pass the initial hearing screening, and evaluating infants and children suspected of having hearing disorders when behavioral audiometric tests are judged to be unreliable, ear-specific thresholds cannot be obtained, or when results are inconclusive regarding the type, degree, or configuration of hearing levels (ASHA, 2004).

The American Academy of Pediatrics (AAP) emphasizes that ABR and OAE are not true tests of hearing and in fact are tests of auditory pathway structural integrity. OAE testing does not assess the integrity of the neural transmission of sound from the eighth nerve to the brainstem and, therefore, will miss auditory neuropathy and other neuronal abnormalities. In these instances, individuals with such abnormalities will have normal OAE test results but abnormal ABR test results. Even if ABR or OAE test results are normal, hearing cannot be definitively considered normal until a child is developmentally mature enough for a reliable behavioral audiogram to be obtained. Behavioral pure tone audiometry is the standard for hearing evaluation (Cunningham, 2003).

According to the AAP, ABR or OAE testing is appropriate to make a confirmatory diagnosis of hearing disorders in infants and children up to 36 months old who did not pass their initial hearing screening. When a permanent hearing deficit is detected, frequency-specific ABR testing is appropriate to determine the degree and configuration of hearing deficiency in each ear for fitting of amplification devices. Click-evoked ABR testing using both condensation and rarefaction single-polarity stimulus are needed to determine if a cochlear microphonic is present when there are risk indicators for neural hearing disorders. Such indicators include auditory neuropathy or auditory dyssynchrony (also known as auditory neuropathy spectrum disorder (ANSD). Hyperbilirubinemia or anoxia are additional risk factors for neural hearing loss (AAP, 2007).

Studies have demonstrated the benefits of the early identification of hearing disorders in children and the success of early interventions. The Wessex Universal Neonatal Hearing Screening Trial (1998) was a nonrandomized, controlled trial carried out in the United Kingdom. This trial explored whether the addition of universal neonatal hearing screening to usual care screening at 7 to 8 months of age versus 7 to 8 months screening alone increases identification and improved the early management of infants with congenital permanent childhood hearing impairment (PCHI). The study included 25,609 newborns born during periods when universal newborn hearing screening was conducted and 28,172 infants who were not screened as newborns. The researchers screened infants using TEOAE. ABR testing was performed on the same day for infants who failed this test. Participants were also screened using the Health Visitor Distraction Test at 7 to 8 months of age. Infants were referred to audiology services when they had abnormal newborn screening test results, abnormal Health Visitor Distraction Tests, or when there were additional concerns regarding hearing impairment. Neonatal screening was provided for 87% coverage with a false-alarm rate of 1.5% and an overall yield of 90 cases of bilateral PCHI of 40 dB or more relative to hearing threshold level per 100,000 target population. This value is equivalent to 80% of the expected prevalence of the disorder in the population. Seventy-one more infants per 100,000 target population were referred for evaluation of moderate or severe PCHI before age 6 months of age during periods with neonatal screening compared to periods without this screening. Early confirmation and management of PCHI were significantly increased. The rate of false-negative results from neonatal screening was significantly lower than that for the distraction test (4% vs. 27% p=0.041). The authors concluded that neonatal screening is effective in the early identification of congenital PCHI and may be particularly useful for infants with moderate and severe PCHI for whom early management may have the most benefit.

Kennedy and colleagues (2006) evaluated children with bilateral permanent hearing impairment identified from a large birth cohort in southern England. Of the 120 participants in the study, 61 were born during periods with universal newborn screening and 57 had hearing impairment that was confirmed by nine months of age. The primary outcomes were language versus nonverbal ability and speech (expressed as a *z* score). Confirmation of hearing impairment by nine months of age was associated with higher adjusted mean z scores for language as compared with nonverbal ability. Birth during periods with universal newborn screening was also associated with higher adjusted z scores for receptive language as compared with nonverbal ability, although the z scores for expressive language as compared with nonverbal ability were not significantly higher. Speech scores did not differ significantly between those who were exposed to newborn screening or early confirmation and those who were not.

Nelson and colleagues (2008) completed an updated review for the US Preventive Services Task Force on universal newborn hearing screening. The systematic review focused on observational studies and controlled trials addressing the outcomes of infants screened for hearing loss by 6 months of age. The research addressed three questions:

1. Among infants identified by universal screening who would not be identified by targeted screening, does initiating treatment before 6 months of age improve language and communication outcomes?
2. Compared with targeted screening, does universal screening increase the chance that treatment will be initiated by 6 months of age for infants at average risk or for those at high risk?
3. What are the adverse effects of screening and early treatment?

The authors found that children with hearing loss who undergo universal newborn hearing screening have better language outcomes at school age than children who were not screened. Infants identified with hearing loss through universal screening receive intervention (referral, diagnosis, and treatment) earlier than those identified in other ways (Nelson, 2008).

Because approximately half of the children with hearing loss have no identifiable risk factors, universal screening (instead of targeted screening) has been proposed to identify children with permanent congenital hearing loss. According to the United States Preventive Services Task Force (USPSTF, 2010), newborn hearing screening testing is highly accurate and leads to earlier identification and treatment of infants with hearing loss. Several professional societies and governmental organizations have published guidelines emphasizing the importance of hearing screening in infants and children. While these bodies all agree that ABR and OAE testing are useful screening tools in the identification of hearing loss, there is still a lack of consensus about the frequency of screening, which tests are most appropriate for the different age groups, and when ABR or OAE testing is appropriate outside of the screening setting.

According to the ASHA, OAEs and ABRs are appropriate tools to assess for hearing disorders in children who are chronologically or developmentally between 0 to 4 months of age (age adjusted for prematurity). For children who have a chronological or developmental age from 5 to 60 months, evoked OAEs and/or ABR testing should be completed when behavioral audiometric tests are judged to be unreliable, ear-specific thresholds cannot be obtained, or when results are inconclusive regarding type, degree, or configuration of hearing levels. ABR testing should be conducted if the neurological integrity of the auditory system through the level of the brainstem is in question (ASHA, 2004).

The JCIH published a position statement titled “Principles and Guidelines for Early Hearing Detection and Intervention Programs. According to this guideline, “both OAE and automated ABR technologies provide noninvasive recordings of physiologic activity

underlying normal auditory function, both are easily performed in neonates and infants." To maximize the outcome for infants who are deaf or hard of hearing, all infants should be screened at no later than 1 month of age. Infants in the well-infant nursery should be screened for hearing loss using either OAE or automated ABR and receive an additional screening prior to discharge. The hospital may choose to use the same technology for both screenings (OAE followed by OAE or automated ABR followed by a second ABR prior to discharge) or may opt to use OAE for the initial screening followed by automated ABR prior to discharge. Infants who do not pass the initial OAE screening but subsequently pass an automated ABR test are considered a screening "pass." Infants in the well-infant nursery who fail automated ABR testing should not be rescreened by OAE testing and "passed," because such infants are presumed to be at risk of having a subsequent diagnosis of auditory neuropathy/dyssynchrony. The JCIH recommends automated ABR technology as the only appropriate technique for screening infants in the neonatal intensive care unit (NICU). Infants who do not pass automated ABR testing in the NICU, should be referred to an audiologist for rescreening and, when indicated, comprehensive evaluation including diagnostic ABR testing. Infants with confirmed hearing loss should receive appropriate intervention at no later than 6 months of age from education and health care professionals with expertise in hearing loss and deafness in infants and young children. According to the American Academy of Pediatrics (AAP, 2007):

> Early and more frequent assessment may be indicated for children with cytomegalovirus (CMV) infection, syndromes associated with progressive hearing loss, neurodegenerative disorders, trauma, or culture positive postnatal infections associated with sensorineural hearing loss, for children who have received extracorporeal membrane oxygenation (ECMO) or chemotherapy; and when there is caregiver concern or a family history of hearing loss.

The United States Preventive Services Task Force (UPSTF) recommends that newborn hearing screening programs include a 1- or 2-step validated protocol which includes OAEs followed by ABR in those who failed the first test. Infants with positive screening test results should receive appropriate audiologic evaluation and follow-up after discharge. All infants should undergo hearing screening before 1 month of age. Any infant who does not pass the newborn screening should undergo audiologic and medical evaluation before 3 month of age (USPSTF, 2010).

The American Academy of Pediatrics (AAP), in a guideline titled "Hearing Assessment in Infants and Children: Recommendations Beyond Neonatal Screening", specifies that the technology used for hearing screening should be age appropriate. Evoked OAE testing is appropriate for children of any developmental age and automated ABR testing is appropriate for infants with a developmental age between birth to 9 months. Behavioral audiological testing for infants and children between the developmental ages of 9 months to 2½ years is generally performed using visual reinforcement audiometry and play audiometry is generally used for children with a developmental age between 2½ to 4 years (Harlor, 2009).

The American Academy of Audiology (AAA 2010; AAA 2020; AAO, 2011) endorses the detection of hearing disorders in early childhood and school-aged populations using evidence-based hearing screening methods. OAEs are recommended for preschool and school age children for whom pure tone screening is not developmentally appropriate (ability levels less than 3 years). In their clinical practice guidelines on the diagnosis, treatment and management of central auditory processing disorder, AAA recommends that for "infants and young children, or any person who cannot be evaluated with behavioral techniques, conventional ABR assessment provides useful information on the integrity of the auditory nerve and brainstem pathways". AAA also recommends that individuals suspected of central auditory processing disorder who yield ABR abnormalities should undergo otologic and neurologic evaluation and follow-up (AAA 2010).

The American Academy of Otolaryngology-Head and Neck Surgery recommends that in individuals with greater-than-mild sudden sensorineural hearing loss (SSNHL), OAEs may help distinguish sensory from neural hearing loss. However, this recommendation was assigned a Grade C rating (based on criteria used in RCTs assessing the benefits and timing for intervention for SSNHL) (Chandrasekhar, 2019).

Other Indications

Diagnosis of Acoustic Neuroma (vestibular schwannoma)

Vestibular schwannomas (acoustic neuromas, acoustic schwannomas, acoustic neurinomas, and vestibular neurilemomas) are Schwann cell-derived tumors that arise from the vestibular portion of the eighth cranial nerve.

Historically, other auditory tests have been used to diagnose acoustic neuromas (vestibular schwannomas), including but not limited to, acoustic reflex testing and impedance audiometry. ABR was the diagnostic method of choice before the use of MRI in the diagnosis of retrocochlear pathology. ABR use has decreased with the increased availability of MRI. However, if an individual has a contraindication to undergoing MRI, then ABR may be used for diagnostic purposes. Similarly, if MRI results are equivocal, ABR may be used for confirmation of diagnosis (Chandrasekhar, 2019).

An American College of Radiology (ACR) 2013 guideline titled ACR Appropriateness Criteria® vertigo and hearing loss, states that ABR and gadolinium-enhanced MRI are used to discriminate among idiopathic, viral, and other causes of sensorineural hearing loss (Angtuaco, 2013).

Ototoxicity Monitoring

Common drugs including aminoglycosides (for example, gentamicin, kanamycin, neomycin and tobramycin), chemotherapeutic agents (primarily cisplatin and its analogue carboplatin), and heavy metals are known for their ototoxic potential. The goal of monitoring for ototoxicity is to identify cochlear dysfunction early in an effort to reduce or prevent further auditory damage. Pure tone audiometry or ABR is useful in documenting changes in hearing associated with ototoxic drug treatment but do not provide the ability to predict forthcoming hearing loss. Conversely, because OAEs originate from the outer hair cells of the cochlea; virtually any insult to the cochlea ranging from anoxia to ototoxic damage of outer hair cells may result in amplitude reduction or loss of OAEs. Therefore, OAEs can provide information regarding hair cell damage before it becomes apparent in the results of pure tone threshold measurements. When OAEs are abolished, however, behavioral and electrophysiologic measurements must be used to track hearing changes (Katbamna, 2008).

The AAA and the ASHA support the use of OAEs or ABRs to monitor for ototoxicity in individuals undergoing treatment with an ototoxic agent (for example, aminoglycosides, chemotherapy agents, and heavy metals). Both organizations indicate that ototoxicity monitoring tests require a baseline evaluation which is ideally performed prior to the administration of any ototoxic drugs. The baseline assessment should use the same tests that will be used later for monitoring so that later results have the clearest basis for interpretation. Comprehensive baseline testing may include the testing of OAEs (AAA, 2009; AAA 2020; Konrad-Martin, 2005).

Definitions

Auditory Brainstem Response (ABR): A test that measures the electrical activity in cochlea and auditory pathways of the brain in response to clicks or certain tones. ABR is also referred to as auditory evoked response (AER), auditory evoked potential (AEP), evoked auditory potential (EAP), brainstem auditory evoked potential (BAEP), brainstem auditory evoked response (BAER), and

evoked response audiometry (ERA).

Auditory neuropathy: A type of hearing impairment where outer hair cell function is normal but neural transmission in the auditory pathway is impaired, also known as auditory dyssynchrony, auditory neural hearing loss and auditory neuropathy spectrum disorder (ANSD).

Cochlea: Part of the inner ear that processes sound waves into neural impulses.

Distortion Product Otoacoustic Emissions (DPOAEs): Sounds emitted in response to 2 simultaneous tones of different frequencies.

Evoked Otoacoustic Emissions (OAE): Sounds measured in the external ear canal that are a reflection of the functioning of the cochlea.

Evoked Responses (also known as evoked potentials): Electrical responses produced by the nervous system in response to a stimulus (auditory, somatosensory, or visual).

Neonatal Intensive Care Unit (NICU): An intensive care unit specialized for providing care to newborn infants.

Transient Evoked Otoacoustic Emissions (TEOAEs): Sounds emitted in response to acoustic stimuli of very short duration; usually tone-bursts or clicks. Also known as transient otoacoustic emissions (TOAEs).

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Government Agency, Medical Society, and Other Authoritative Publications:

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History

Status	Date	Action
Revised	05/11/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Reformatted bullets to alphanumeric. Updated References section.
Revised	05/12/2022	MPTAC review. Clarification of NMN statement. Updated Coding and References sections.
Reviewed	05/13/2021	MPTAC review. Updated Discussion/General Information and References sections. Reformatted Coding section.
	12/16/2020	Updated Coding section with 01/01/2021 CPT changes; added 92650-92653 replacing 92585, 92586 deleted 12/31/2020.
Reviewed	05/14/2020	MPTAC review. Updated Description, Discussion/General Information, Definitions, References and History sections of the document.
Revised	06/06/2019	MPTAC review. In first medically necessary position statement, clarified the meaning of the acronyms "ABR" and “OAE”. Updated References, Coding and History sections.
Reviewed	07/26/2018	MPTAC review. Corrected grammatical error in Medically Necessary Position Statement section. Updated References and History sections of the document.
	05/03/2018	The document header wording updated from “Current Effective Date” to “Publish Date.”
Reviewed	08/03/2017	MPTAC review. Updated Discussion/General Information, Definitions, References and History sections of the document.
Reviewed	08/04/2016	MPTAC review. Updated Rationale, References and History sections of the document. Removed ICD-9 codes from Coding section and updated with 10/01/2016 ICD-10-CM updates.
Revised	08/06/2015	MPTAC review. In the Position Statement section, changed “eg.” to “for example”. Updated the review date, Rationale and History sections of the document.
Reviewed	08/14/2014	MPTAC review. Updated the Description, References and History sections of the document.
Revised	08/08/2013	MPTAC review. Title of document changed to “Auditory Brainstem Responses (ABRs) and Evoked Otoacoustic Emissions (OAEs) for Hearing Disorders”. Medically necessary criteria revised to address *automated* ABR. The term “hearing loss” was replaced with “hearing disorder” when appropriate. Revisions to the not medically necessary criteria included the removal of diagnostic testing and the addition of evaluation for suspected presbycusis, suspected otosclerosis and individuals able to undergo standard audiometry. Coding was updated.
New	05/09/2013	MPTAC review. Initial document development.