

Corporate Medical Policy

Tinnitus Treatment

File Name:	tinnitus_treatment
Origination:	4/1986
Last CAP Review:	8/2018
Next CAP Review:	8/2019
Last Review:	8/2018

Description of Procedure or Service

A variety of non-pharmacologic treatments are being evaluated to improve the subjective symptoms of tinnitus. These approaches include psychological coping therapies, sound therapies, combined psychological and sound therapies, repetitive transcranial magnetic stimulation, electrical and electromagnetic stimulation, and transmeatal laser irradiation.

Tinnitus describes the perception of any sound in the ear in the absence of an external stimulus and presents as a malfunction in the processing of auditory signals. A hearing impairment, often noise-induced or related to aging, is commonly associated with tinnitus. Clinically, tinnitus is subdivided into subjective and objective; the latter describes the minority of cases, in which an external stimulus is potentially heard by an observer, for example by placing a stethoscope over the patient's external ear. Common causes of objective tinnitus include middle ear and skull-based tumors, vascular abnormalities, and metabolic derangements. In the majority of cases, tinnitus is subjective and frequently self-limited. In a small subset of patients with subjective tinnitus, its intensity and persistence leads to disruption of daily life. While many patients habituate to tinnitus, others may seek medical care if the tinnitus becomes too disruptive.

Many treatments are supportive in nature, as currently, there is no cure. One treatment, called tinnitus masking therapy, has focused on use of devices worn in the ear that produce a broad band of continuous external noise that drowns out or masks the tinnitus. Psychological therapies may also be provided to improve coping skills, typically requiring 4 to 6 one-hour visits over an 18-month period. Tinnitus retraining therapy, also referred to as tinnitus habituation therapy, is based on the theories of a researcher named Jastreboff. Jastreboff proposes that tinnitus itself is related to the normal background electrical activity in auditory nerve cells, but the key factor in some patients' unpleasant response to the noise is due to a spreading of the signal and an abnormal conditioned reflex in the extra-auditory limbic and autonomic nervous systems. The goal of tinnitus retraining therapy is to retrain the subcortical and cortical response to the auditory neural activity. In contrast to tinnitus masking, the auditory stimulus is not intended to drown out or mask the tinnitus, but is set at a level such that the tinnitus can still be detected. This strategy is thought to enhance extinction of the subconscious conditioned reflexes connecting the auditory system with the limbic and autonomic nervous systems by increasing the neuronal activity within the auditory system. Treatment may also include the use of hearing aids to increase external auditory stimulation. The Heidelberg model uses an intensive program of active and receptive music therapy, relaxation with habituation to the tinnitus sound, and stress mapping with a therapist.

Sound therapy is a treatment approach that is based on evidence of auditory cortex reorganization (cortical remapping) with tinnitus, hearing loss, and sound/frequency training. One type of sound therapy uses an ear-worn device (Neuromonics® Tinnitus Treatment, Neuromonics, Australia) pre-recorded with selected relaxation audio and other sounds spectrally adapted to the individual patient's hearing thresholds. This is achieved by boosting the amplitude of those frequencies at which an

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audiogram has shown the patient to have a reduced hearing threshold. Also being evaluated is auditory tone discrimination training at or around the tinnitus frequency. Another type of sound therapy that is being investigated uses music with the frequency of the tinnitus removed (notched music) to promote reorganization of sound processing in the auditory cortex. One theory behind notched music is that tinnitus is triggered by injury to inner ear hair cell population, resulting in both a loss of excitatory stimulation of the represented auditory cortex and loss of inhibition on the adjoining frequency areas. It is proposed that this loss of inhibition leads to hyperactivity and overrepresentation at the edge of the damaged frequency areas and that removing the frequencies overrepresented at the audiometric edge will result in reorganization of the brain.

Electrical stimulation to the external ear has also been investigated and is based on the observation that the electrical stimulation of the cochlea associated with a cochlear implant may be associated with a reduction in tinnitus. Transmeatal low-power laser irradiation, electrical stimulation, and transcranial magnetic stimulation have also been evaluated.

The Neuromonics® Tinnitus Treatment has been cleared for marketing as a tinnitus masker through the Food and Drug Administration’s (FDA) 510(k) process, and is “intended to provide relief from the disturbance of tinnitus, while using the system, and with regular use (over several months) may provide relief to the patient whilst not using the system.”

Table 1. Devices Cleared by the US Food and Drug Administration for Tinnitus Relief

Devices	Manufacturer	510(k) No.	Date Cleared
Tinnitus Sound Generator Module	Gn Hearing A/S	K180495	11/30/2018
Audifon Tinnitus-Module	Audiofon Usa Inc.	K171243	10/19/2017
Tinnilogic Mobile Tinnitus Management De	Jiangsu Betterlife Medical Co., Ltd.	K163094	5/17/2017
Sound Options Tinnitus Treatment	Sound Options Tinnitus Treatments Inc.	K161562	9/28/2016
Hypersound Tinnitus Module	Turtle Beach Corporation	K161331	8/23/2016
Desyncra For Tinnitus Therapy System, De	Neurotherapies Reset Gmbh.	K151558	1/20/2016
Reve134	Kw Ear Lab, Inc	K151719	10/9/2015
Serenity	Sanuthera, Inc.	K150014	7/27/2015
Soundcure Serenade Tinnitus Treatment Sy	Soundcure, Inc.	K150065	4/13/2015
Levo Tinnitus Masking Software Device	Otoharmonics Corp	K140845	7/18/2014

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Solace Sound Generators	Amplisound Hearing Products & Services	K132965	3/25/2014
Tinnitus Soundsupport	Oticon A/S	K133308	3/18/2014
Wave 2g, Soul	Hansaton Akustik Gmbh	K130937	1/3/2014

This policy does not address surgical (e.g., cochlear or brainstem implants) or pharmacologic treatment of tinnitus, e.g., the use of amitriptyline or other tricyclic antidepressants.

Related Policies

Botulinum Toxin Injection

*****Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

Policy

BCBSNC will provide coverage for tinnitus treatment when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

Benefits Application

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

When tinnitus treatment is covered

Psychological coping therapy including cognitive-behavioral therapy, self-help cognitive-behavioral therapy, tinnitus coping therapy, acceptance and commitment therapy, and psychophysiological treatment, may be considered **medically necessary** for persistent and bothersome tinnitus.

When tinnitus treatment is not covered

Treatment of tinnitus with any of the following therapies is considered **investigational**:

- biofeedback
- tinnitus maskers, customized sound therapy
- combined psychological and sound therapy (eg, tinnitus retraining therapy)
- transcranial magnetic stimulation,
- transcranial direct current stimulation
- electrical transcutaneous electrical stimulation of the ear, electromagnetic energy
- transmeatal laser irradiation.

Policy Guidelines

For individuals who have persistent, bothersome tinnitus who receive psychological coping therapy, the evidence includes randomized controlled trials (RCTs) and meta-analyses of RCTs. Relevant

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outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. These therapies are intended to reduce tinnitus impairment and improve health-related quality of life. Meta-analyses of a variety of cognitive and behavioral therapies have found improvement in global tinnitus severity and quality of life, even when tinnitus loudness is not affected. Other RCTs have reported that a self-help/Internet-based approach to cognitive and behavioral therapy or acceptance and commitment therapy may also improve coping skills. The evidence is sufficient to determine that the technology results in a meaningful improvement in health outcomes.

For individuals who have tinnitus who receive sound therapy, the evidence includes RCTs and a systematic review of RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The evidence on tinnitus masking includes a number of RCTs and a systematic review of RCTs. The RCTs have medium-to-high risk of bias and do not show efficacy of masking therapy. Research on customized sound therapy appears to be at an early stage. For example, the studies described use of very different approaches for sound therapy, and it is not yet clear whether therapy is more effective when the training frequency is the same or adjacent to the tinnitus pitch. A 2016 trial, double-blinded and adequately powered, found no benefit of notched music on the primary outcome measures of tinnitus perception and tinnitus distress, although the subcomponent score of tinnitus loudness was reported to be reduced. A benefit on tinnitus loudness but not tinnitus perception or tinnitus distress is of uncertain clinical significance, may be spurious, and would need corroboration in additional studies. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have tinnitus who receive combined psychological and sound therapy, the evidence includes RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The evidence on tinnitus retraining therapy consists of a number of small randomized or quasi-randomized controlled trials. Together, the literature does not show a consistent improvement in the primary outcome measure (Tinnitus Handicap Inventory [THI]) when tinnitus retraining therapy is compared with active or sham controls. For Heidelberg neuromusic therapy, one trial has used an investigator-blinded RCT design and showed positive short-term results following treatment. However, the durability of treatment is also unknown. A large, multicenter RCT using an intensive, multidisciplinary intervention showed improvement in outcomes. However, it is uncertain whether the multiple intensive interventions used in this trial could be replicated outside of the investigational setting. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have tinnitus who receive transcranial magnetic stimulation, the evidence includes a number of small- to moderate-sized RCTs and systematic reviews. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Results from these studies are mixed, with some trials reporting a statistically significant effect of repetitive transcranial magnetic stimulation on tinnitus severity and others reporting no significant difference. Larger controlled trials with longer follow-up are needed for this common condition. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have tinnitus who receive electrical or electromagnetic stimulation, the evidence includes a number of sham-controlled RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The available evidence does not currently support use of these treatments. A 2015 sham-controlled study that was adequately powered found no benefit of transcranial direct current stimulation. Moreover, while a 2017 meta-analysis found some benefit for transcranial direct current stimulation, it was noted that further study would be needed to evaluate transcranial direct current stimulation as a treatment option. Studies have not shown a benefit for direct current electrical stimulation of the ear. The evidence on electromagnetic energy includes a small RCT, which found no benefit for the treatment of tinnitus. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have tinnitus who receive transmeatal laser irradiation, the evidence includes RCTs and crossover trials. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The evidence for transmeatal laser irradiation includes a number of

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double-blind RCTs, most of which showed no efficacy of this treatment. The evidence is insufficient to determine the effects of the technology on health outcomes.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 92625

There is no specific CPT code for psychological coping therapy. The CPT codes used may include evaluation and management codes or possibly 96152 or an unlisted code depending on the type of service and provider.

There are no specific CPT codes for electrical stimulation or tinnitus-retraining therapy. The CPT codes used may include evaluation and management CPT codes or possibly the physical medicine and rehabilitation code (97014) or speech therapy (92507). As tinnitus-retraining therapy in part involves counseling, an individual psychotherapy CPT code may be used (code range 90832-90838). Tinnitus-retraining therapy may also be billed as physical or speech therapy.

There is no specific CPT code for low-level laser therapy. However, providers may elect to use CPT code 97026, because the laser emits light in the infrared spectrum.

As described in the literature, electrical stimulation is an office-based procedure, but if self-administered by the patient, the device could possibly be described by HCPCS code E0720.

Tinnitus-masking devices represent a piece of durable medical equipment. There is currently no specific HCPCS code describing these devices.

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual - 3/96

Medical Policy Advisory Group - 1/99

MEDLINE Search - 11/99

Specialty Matched Consultant Advisory Panel - 7/00.

Medical Policy Advisory Group - 9/14/2000

BCBSA Medical Policy Reference Manual - 8/15/01. 8.01.39

Specialty Matched Consultant Advisory Panel - 6/2002

MEDLINE Search-6/2002

BCBSA Medical Policy Reference Manual, 8.01.39; 4/29/03

Specialty Matched Consultant Advisory Panel - 6/2004

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BCBSA Medical Policy Reference Manual, 8.01.39; 03/15/05.

Specialty Matched Consultant Advisory Panel - 6/1/2006

BCBSA Medical Policy Reference Manual, 8.01.39; 4/25/06.

Medicare Coverage Database. NCD for Tinnitus Masking. Retrieved September 25, 2006 from http://www.cms.hhs.gov/mcd/viewncd.asp?ncd_id=50.6&ncd_version=1&bas-ket=ncd%3A50%2E6%3A1%3ATinnitus+Masking

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 2/14/08.

Specialty Matched Consultant Advisory Panel - 6/2008

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 4/24/09

Hoare DJ, Stacey PC, Hall DA. The Efficacy of Auditory Perceptual Training for Tinnitus: A Systematic Review. *ann behav med* (2010) 40:313-324. Retrieved 7/28/11 from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2974939/pdf/12160_2010_Article_9213.pdf

Fioretti A, Eibenstein A, Fusetti, M. New Trends in Tinnitus Management. *The Open Neurology Journal*, 2011, 5, 12-17. Retrieved 7/28/11 from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3085173/pdf/TONEUJ-5-12.pdf>

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 5/12/2011

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 5/10/2012

Specialty Matched Consultant Advisory Panel -8/2012

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 5/9/2013

Specialty Matched Consultant Advisory Panel -8/2013

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 5/22/2014

Pichora-Fuller MK, Santaguida P, Hammill A et al. Evaluation and Treatment of Tinnitus: Comparative Effectiveness. Comparative Effectiveness Review No. 122. (Prepared by the McMaster University Evidence-based Practice Center under Contract No. 290-2007-10060-I) AHRQ Publication No. 13-EHC110-EF. Rockville, MD: Agency for Healthcare Research and Quality; August 2013. Available online at: www.effectivehealthcare.ahrq.gov/reports/final.cfm. Last accessed August, 2014.

Specialty Matched Consultant Advisory Panel -9/2014

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 5/21/2015

Specialty Matched Consultant Advisory Panel -8/2015

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 3/10/2016

Specialty Matched Consultant Advisory Panel -8/2016

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 2/9/2017

Specialty Matched Consultant Advisory Panel -8/2017

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 2/8/2018

Specialty Matched Consultant Advisory Panel -8/2018

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.39, 2/14/2019

Policy Implementation/Update Information

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- 4/86 Evaluated: Investigational
- 8/88 Reviewed: Investigational
- 7/96 Reaffirmed: National Association reviewed 3/96. No changes.
- 1/99 Reaffirmed: Medical Advisory Group
- 7/99 Reformatted, Medical Term Definitions added.
- 7/00 Specialty Matched Consultant Advisory Panel. No changes to criteria.
- 9/00 Medical Policy Advisory Group review. Approved. No changes to criteria.
- 11/01 Coding Format Change.
- 6/02 Policy name changed from "Electrical Stimulation of the Ear for Suppression of Unremitting Tinnitus" to "Tinnitus Treatment". Expanded Description section to include additional information related to the treatment of tinnitus. Expanded Policy section to include tinnitus maskers, electrical stimulation or tinnitus-retraining therapy as investigational.
- 7/15/04 Specialty Matched Consultant Advisory Panel meeting 6/21/04. Benefits Application and Billing/ Coding sections revised. Added "Transmeatal low-power laser irradiation has also been evaluated" to Description section. Added "transmeatal irradiation" to Policy and When not covered sections. Reference sources added. Notification given 7/15/04. Effective date 9/23/04.
- 10/16/06 Description section revised to include electromagnetic energy, transcranial magnetic stimulation and botulinum toxin A injections. Under Policy and When Not Covered sections, added electromagnetic energy, transcranial magnetic stimulation and botulinum toxin A injections as investigational. Policy guidelines, reference sources, key words and terms and definitions added. Notice given 10/16/06. Effective date 12/18/06. (pmo)
- 7/14/08 Specialty Matched Consultant Advisory Panel review 6/2008. Reference sources added. No changes to criteria. (pmo)
- 6/22/10 Policy Number(s) removed. (amw)
- 7/6/2010 Description section updated. CPT Code 92625 added to Billing/Coding section. Also added information regarding appropriate coding for these services. Specialty Matched Consultant Advisory Panel review 5/24/10. No change to policy statement or coverage criteria. (adn)
- 9/13/11 Description section updated. The following were added to the list of non-covered treatments for tinnitus: tinnitus coping therapy, transcutaneous electrical stimulation and sound therapy. References updated. Specialty Matched Consultant Advisory Panel review 8/31/11. (adn)
- 9/4/12 Policy Guidelines updated. No change to coverage criteria. Specialty Matched Consultant Advisory Panel review 8/15/12. (sk)
- 1/1/13 CPT codes 90804-90809 replaced with CPT codes 90832-90838 in Billing/Coding Section. (sk)
- 7/1/13 Reference added. Related Policies added. Policy Guidelines updated. Medical Director review. No change to Policy statement. (sk)
- 11/12/13 Specialty Matched Consultant Advisory Panel review 8/21/13. No change to Policy guidelines. (sk)
- 7/15/14 Reference added. No change to Policy statement. (sk)

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- 10/14/14 Reference added. Specialty Matched Consultant Advisory Panel review 9/30/14. No change to Policy guidelines. (sk)
- 7/1/15 Reference added. (sk)
- 10/1/15 Specialty Matched Consultant Advisory Panel review 8/26/2015. (sk)
- 4/29/16 Reference added. Policy Guidelines updated. (sk)
- 9/30/16 Specialty Matched Consultant Advisory Panel review 8/31/2016. (sk)
- 3/31/17 Reference added. Policy Guidelines updated. Psychological coping therapy may be considered medically necessary for persistent and bothersome tinnitus added to the covered policy statement. Combined psychological and sound therapy added to the investigational policy statement. (sk)
- 9/29/17 Specialty Matched Consultant Advisory Panel review 8/30/2017. (sk)
- 3/29/18 Reference added. When Covered section revised to define psychological coping therapy; biofeedback added to the investigational policy statement. (sk)
- 9/7/18 Specialty Matched Consultant Advisory Panel review 8/22/2018. (sk)
- 4/16/19 Reference added. Table of US FDA cleared devices added to Description section. (sk)

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.