



MASSACHUSETTS

Blue Cross Blue Shield of Massachusetts is an Independent Licensee of the Blue Cross and Blue Shield Association

Medical Policy

Treatment of Tinnitus

Table of Contents

- [Policy: Commercial](#)
- [Policy: Medicare](#)
- [Authorization Information](#)
- [Coding Information](#)
- [Description](#)
- [Policy History](#)
- [Information Pertaining to All Policies](#)
- [References](#)

Policy Number: 267

BCBSA Reference Number: 8.01.39

NCD/LCD: N/A

Related Policies

- Auditory Brainstem Implant, [#481](#)
- Biofeedback for Miscellaneous Indications, [#187](#)
- Botulinum Toxin Injections, [#006](#)
- Cochlear Implant, [#478](#)
- Low-Level Laser Therapy, [#522](#)
- Repetitive Transcranial Magnetic Stimulation, [#297](#)
- Transcranial Magnetic Stimulation as a Treatment of Depression and Other Psychiatric/Neurologic Disorders, [#297](#)

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

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.

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.

Note: This policy does not address surgical (eg, cochlear or brainstem implants) or pharmacologic (eg, use of amitriptyline or other tricyclic antidepressants) treatments of tinnitus, or injection of botulinum toxin.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

	Outpatient
Commercial Managed Care (HMO and POS)	Prior authorization is not required .
Commercial PPO and Indemnity	Prior authorization is not required .
Medicare HMO BlueSM	Prior authorization is not required .
Medicare PPO BlueSM	Prior authorization is not required .

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes

There are no specific CPT codes for these services.

Description

Tinnitus

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 types. The latter describes the minority of cases, in which an external stimulus is potentially heard by an observer (eg, 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. The more common type is subjective tinnitus, which is 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.

Treatment

Many treatments are supportive because, currently, there is no cure. One treatment, called tinnitus masking therapy, has focused on the 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 Jastreboff, who proposed 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 habituate (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 subconsciously conditioned reflexes connecting the auditory system with the limbic and autonomic nervous systems by increasing 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 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) prerecorded 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 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 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 the 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 the reorganization of the brain.

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

Summary

Various nonpharmacologic treatments are being evaluated to improve the 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.

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 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 improvements 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 RCTs and a systematic review of RCTs. The RCTs had medium-to-high risk of bias and did not show the efficacy of masking therapy. Research on customized sound therapy appears to be at an early stage. For example, the studies described the 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-RCTs. Collectively, the literature does not show consistent improvements in the primary outcome measure (Tinnitus Handicap Inventory scores) when tinnitus retraining therapy is compared with active or sham controls. For Heidelberg neuromusic therapy, a 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 trial 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 randomized trials. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The available evidence does not currently support the use of these stimulation therapies. 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 double-blind RCTs, most of which showed no treatment efficacy. The evidence is insufficient to determine the effects of the technology on health outcomes.

Policy History

Date	Action
4/2019	BCBSA National medical policy review. Description, summary and references updated. Policy statement(s) unchanged.
7/2018	BCBSA National medical policy review. New medically necessary and investigational indications described. Effective 7/1/2018.
7/2017	BCBSA National medical policy review. Policy updated to indicate that psychological coping therapy is medically necessary for persistent and bothersome tinnitus. Combined psychological and sound therapy added to the investigational policy statement. Effective 7/1/2017.
5/2016	BCBSA National medical policy. Policy statement reordered and “surgical” added to the note on topics that the policy does not address. 5/1/2016
7/2015	New references added from BCBSA National medical policy.
9/2014	New references added from BCBSA National medical policy.
6/2013	New references from BCBSA National medical policy.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
1/1/2012	Revised. National Policy Review. No changes to policy statements.
3/2011	Reviewed - Medical Policy Group – Allergy/Asthma/Immunology and ENT/Otolaryngology. No changes to policy statements.
9/29/2010	New policy with coverage information currently on medical policy #400.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

References

1. Pichora-Fuller MK, Santaguida P, Hammill A, et al. Evaluation and Treatment of Tinnitus: Comparative Effectiveness (Comparative Effectiveness Review No. 122). Rockville, MD: Agency for Healthcare Research and Quality; 2013.
2. Martinez-Devesa P, Perera R, Theodoulou M, et al. Cognitive behavioural therapy for tinnitus. *Cochrane Database Syst Rev*. Sep 8 2010(9):CD005233. PMID 20824844
3. McKenna L, Marks EM, Vogt F. Mindfulness-Based Cognitive Therapy for Chronic Tinnitus: Evaluation of Benefits in a Large Sample of Patients Attending a Tinnitus Clinic. *Ear Hear*. Mar/Apr 2018;39(2):359-366. PMID 28945659
4. Zenner HP, Vonthein R, Zenner B, et al. Standardized tinnitus-specific individual cognitive-behavioral therapy: a controlled outcome study with 286 tinnitus patients. *Hear Res*. Apr 2013;298:117-125. PMID 23287811
5. Westin VZ, Schulin M, Hesser H, et al. Acceptance and commitment therapy versus tinnitus retraining therapy in the treatment of tinnitus: a randomised controlled trial. *Behav Res Ther*. Nov 2011;49(11):737-747. PMID 21864830
6. Kaldo V, Cars S, Rahnert M, et al. Use of a self-help book with weekly therapist contact to reduce tinnitus distress: a randomized controlled trial. *J Psychosom Res*. Aug 2007;63(2):195-202. PMID 17662757
7. Kaldo V, Levin S, Widarsson J, et al. Internet versus group cognitive-behavioral treatment of distress associated with tinnitus: a randomized controlled trial. *Behav Ther*. Dec 2008;39(4):348-359. PMID 19027431
8. Hesser H, Gustafsson T, Lunden C, et al. A randomized controlled trial of Internet-delivered cognitive behavior therapy and acceptance and commitment therapy in the treatment of tinnitus. *J Consult Clin Psychol*. Aug 2012;80(4):649-661. PMID 22250855
9. Jasper K, Weise C, Conrad I, et al. Internet-based guided self-help versus group cognitive behavioral therapy for chronic tinnitus: a randomized controlled trial. *Psychother Psychosom*. Jun 2014;83(4):234-246. PMID 24970708
10. Weise C, Kleinstaubler M, Andersson G. Internet-delivered cognitive-behavior therapy for tinnitus: a randomized controlled trial. *Psychosom Med*. May 2016;78(4):501-510. PMID 26867083
11. Beukes EW, Baguley DM, Allen PM, et al. Audiologist-guided internet-based cognitive behavior therapy for adults with tinnitus in the United Kingdom: a randomized controlled trial. *Ear Hear*. Nov 1 2017. PMID 29095725
12. Henry JA, McMillan G, Dann S, et al. Tinnitus management: randomized controlled trial comparing extended-wear hearing aids, conventional hearing aids, and combination instruments. *J Am Acad Audiol*. Jun 2017;28(6):546-561. PMID 28590898
13. Hobson J, Chisholm E, El Refaie A. Sound therapy (masking) in the management of tinnitus in adults. *Cochrane Database Syst Rev*. Dec 8 2010(12):CD006371. PMID 21154366
14. Hobson J, Chisholm E, El Refaie A. Sound therapy (masking) in the management of tinnitus in adults. *Cochrane Database Syst Rev*. Nov 14 2012;11:CD006371. PMID 23152235
15. Jalilvand H, Pournakht A, Haghani H. Hearing aid or tinnitus masker: which one is the best treatment for blast-induced tinnitus? The results of a long-term study on 974 patients. *Audiol Neurotol*. May 2015;20(3):195-201. PMID 25924663
16. Davis PB, Wilde RA, Steed LG, et al. Treatment of tinnitus with a customized acoustic neural stimulus: a controlled clinical study. *Ear Nose Throat J*. Jun 2008;87(6):330-339. PMID 18561116
17. Hanley PJ, Davis PB, Paki B, et al. Treatment of tinnitus with a customized, dynamic acoustic neural stimulus: clinical outcomes in general private practice. *Ann Otol Rhinol Laryngol*. Nov 2008;117(11):791-799. PMID 19102123
18. Herraiz C, Diges I, Cobo P, et al. Auditory discrimination training for tinnitus treatment: the effect of different paradigms. *Eur Arch Otorhinolaryngol*. Jul 2010;267(7):1067-1074. PMID 20044759
19. Okamoto H, Stracke H, Stoll W, et al. Listening to tailor-made notched music reduces tinnitus loudness and tinnitus-related auditory cortex activity. *Proc Natl Acad Sci U S A*. Jan 19 2010;107(3):1207-1210. PMID 20080545

20. Stein A, Wunderlich R, Lau P, et al. Clinical trial on tonal tinnitus with tailor-made notched music training. *BMC Neurol.* Mar 17 2016;16:38. PMID 26987755
21. Li SA, Bao L, Chrostowski M. Investigating the effects of a personalized, spectrally altered music-based sound therapy on treating tinnitus: a blinded, randomized controlled trial. *Audiol Neurootol.* Nov 12 2016;21(5):296-304. PMID 27838685
22. Hoare DJ, Kowalkowski VL, Kang S, et al. Systematic review and meta-analyses of randomized controlled trials examining tinnitus management. *Laryngoscope.* Jul 2011;121(7):1555-1564. PMID 21671234
23. Bauer CA, Brozoski TJ. Effect of tinnitus retraining therapy on the loudness and annoyance of tinnitus: a controlled trial. *Ear Hear.* Mar-Apr 2011;32(2):145-155. PMID 20890204
24. Henry JA, Schechter MA, Zaugg TL, et al. Clinical trial to compare tinnitus masking and tinnitus retraining therapy. *Acta Otolaryngol Suppl.* Dec 2006(556):64-69. PMID 17114146
25. Phillips JS, McFerran D. Tinnitus Retraining Therapy (TRT) for tinnitus. *Cochrane Database Syst Rev.* Mar 17 2010;3(3):CD007330. PMID 20238353
26. Grewal R, Spielmann PM, Jones SE, et al. Clinical efficacy of tinnitus retraining therapy and cognitive behavioural therapy in the treatment of subjective tinnitus: a systematic review. *J Laryngol Otol.* Dec 2014;128(12):1028-1033. PMID 25417546
27. Argstatter H, Grapp M, Hutter E, et al. The effectiveness of neuro-music therapy according to the Heidelberg model compared to a single session of educational counseling as treatment for tinnitus: a controlled trial. *J Psychosom Res.* Mar 2015;78(3):285-292. PMID 25224125
28. Cima RF, Maes IH, Joore MA, et al. Specialised treatment based on cognitive behaviour therapy versus usual care for tinnitus: a randomised controlled trial. *Lancet.* May 26 2012;379(9830):1951-1959. PMID 22633033
29. Soleimani R, Jalali MM, Hasandokht T. Therapeutic impact of repetitive transcranial magnetic stimulation (rTMS) on tinnitus: a systematic review and meta-analysis. *Eur Arch Otorhinolaryngol.* Jul 2016;273(7):1663-1675. PMID 25968009
30. Langguth B, Landgrebe M, Frank E, et al. Efficacy of different protocols of transcranial magnetic stimulation for the treatment of tinnitus: Pooled analysis of two randomized controlled studies. *World J Biol Psychiatry.* May 2014;15(4):276-285. PMID 22909265
31. Folmer RL, Theodoroff SM, Casiana L, et al. Repetitive transcranial magnetic stimulation treatment for chronic tinnitus: a randomized clinical trial. *JAMA Otolaryngol Head Neck Surg.* Aug 2015;141(8):716-722. PMID 26181507
32. Song JJ, Vanneste S, Van de Heyning P, et al. Transcranial direct current stimulation in tinnitus patients: a systemic review and meta-analysis. *ScientificWorldJournal.* Nov 2012;2012:427941. PMID 23133339
33. Pal N, Maire R, Stephan MA, et al. Transcranial direct current stimulation for the treatment of chronic tinnitus: a randomized controlled study. *Brain Stimul.* Nov-Dec 2015;8(6):1101-1107. PMID 26198363
34. Wang TC, Tyler RS, Chang TY, et al. Effect of transcranial direct current stimulation in patients with tinnitus: a meta-analysis and systematic review. *Ann Otol Rhinol Laryngol.* Feb 2018;127(2):79-88. PMID 29192507
35. Abtahi H, Okhovvat A, Heidari S, et al. Effect of transcranial direct current stimulation on short-term and long-term treatment of chronic tinnitus. *Am J Otolaryngol.* Mar - Apr 2018;39(2):94-96. PMID 29336898
36. Jacquemin L, Shekhawat GS, Van de Heyning P, et al. Effects of Electrical Stimulation in Tinnitus Patients: Conventional Versus High-Definition tDCS. *Neurorehabil Neural Repair.* Aug 2018;32(8):714-723. PMID 30019630
37. Dobie RA, Hoberg KE, Rees TS. Electrical tinnitus suppression: a double-blind crossover study. *Otolaryngol Head Neck Surg.* Oct 1986;95(3 Pt 1):319-323. PMID 3108780
38. Thedinger BS, Karlsen E, Schack SH. Treatment of tinnitus with electrical stimulation: an evaluation of the Audimax Theraband. *Laryngoscope.* Jan 1987;97(1):33-37. PMID 3491942
39. Mielczarek M, Olszewski J. Direct current stimulation of the ear in tinnitus treatment: a double-blind placebo-controlled study. *Eur Arch Otorhinolaryngol.* Jun 2014;271(6):1815-1822. PMID 24337877
40. Ghossaini SN, Spitzer JB, Mackins CC, et al. High-frequency pulsed electromagnetic energy in tinnitus treatment. *Laryngoscope.* Mar 2004;114(3):495-500. PMID 15091224
41. Nakashima T, Ueda H, Misawa H, et al. Transmeatal low-power laser irradiation for tinnitus. *Otol Neurotol.* May 2002;23(3):296-300. PMID 11981384

42. Teggi R, Bellini C, Piccioni LO, et al. Transmeatal low-level laser therapy for chronic tinnitus with cochlear dysfunction. *Audiol Neurootol*. Oct 2009;14(2):115-120. PMID 18843180
43. Ngao CF, Tan TS, Narayanan P, et al. The effectiveness of transmeatal low-power laser stimulation in treating tinnitus. *Eur Arch Otorhinolaryngol*. May 2014;271(5):975-980. PMID 23605244
44. Dehkordi MA, Einolghozati S, Ghasemi SM, et al. Effect of low-level laser therapy in the treatment of cochlear tinnitus: a double-blind, placebo-controlled study. *Ear Nose Throat J*. Jan 2015;94(1):32-36. PMID 25606834
45. Lefaucheur JP, Antal A, Ayache SS, et al. Evidence-based guidelines on the therapeutic use of transcranial direct current stimulation (tDCS). *Clin Neurophysiol*. Jan 2017;128(1):56-92. PMID 27866120
46. Tunkel DE, Bauer CA, Sun GH, et al. Clinical practice guideline: tinnitus. *Otolaryngol Head Neck Surg*. Oct 2014;151(2 Suppl):S1-S40. PMID 25273878
47. Centers for Medicare & Medicaid Services. National Coverage Determination (NCD) for Tinnitus Masking - RETIRED (50.6). 2014; <https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=85&ncdver=2&bc=AAAAgAAAAAAAAA%3d%3d&>. Accessed January 25, 2018.