

# MEDICAL POLICY

MEDICAL POLICY DETAILS	
Medical Policy Title	TREATMENT OF TINNITUS
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Category	Technology Assessment
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Product Disclaimer	<ul style="list-style-type: none"> <li>• If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.</li> <li>• If a commercial product (including an Essential Plan product) or a Medicaid product covers a specific service, medical policy criteria apply to the benefit.</li> <li>• If a Medicare product covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.</li> </ul>

## POLICY STATEMENT

Based upon our criteria and assessment of peer-reviewed literature, all proposed treatment modalities for the treatment of idiopathic tinnitus have not been medically proven to be effective and are considered **investigational**.

*Refer to Corporate Medical Policy #2.01.09 regarding Biofeedback.*

*Refer to Corporate Medical Policy #3.01.09 regarding Transcranial Magnetic Stimulation.*

*Refer to Corporate Medical Policy #7.01.26 regarding Cochlear Implants and Auditory Brainstem Implants.*

*Refer to Corporate Medical Policy #8.01.19 regarding Cognitive Rehabilitation.*

*Refer to Corporate Medical Policy #11.01.03 regarding Experimental and Investigational Services.*

## POLICY GUIDELINES

- I. For patients with tinnitus and hearing loss, in which hearing aids are prescribed to treat the hearing loss, benefits will be provided according to the member's subscriber contract for hearing aids.
- II. The Federal Employee Health Benefit Program (FEHBP/FEP) requires that procedures, devices or laboratory tests approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational and thus these procedures, devices or laboratory tests may be assessed only on the basis of their medical necessity

## DESCRIPTION

Tinnitus is the term for "noises" heard in the ears or in the head (e.g., buzzing, ringing, whistling, hissing, or pulsing) that do not come from an external source. Emergence of tinnitus, usually lasting for a short period of time, is extremely common. Tinnitus is a natural phenomenon that usually resolves after a short period of time. Persistent tinnitus occurs in about 10% of the population and is due to parts of the brain concerned with analyzing sound signals focusing on weak messages which, in most cases, are part of normal ear function. Persistent tinnitus is often triggered or made worse by emotional events, bereavement, work and family stress, an accident or an injury.

Tinnitus can be divided into two major categories: that generated by para-auditory structures, usually from the vascular or myoclonic sources, and that generated by the sensorineural auditory system. Distinction between the two categories is important as evaluation and treatment of the two forms is entirely different.

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Tinnitus is classified into two types:

- I. Subjective tinnitus - is more common and is audible only to the patient. It may arise from electrophysiological disturbances anywhere in the auditory system. The underlying causes of subjective tinnitus include:
  - A. otological disorders (e.g., presbycusis, noise-induced, Meniere's disease, chronic otitis media),
  - B. metabolic disorders (e.g., diabetes, thyroid diseases, hyperlipidemia, zinc or vitamin deficiency),
  - C. pharmacological (e.g., non-steroidal anti-inflammatory drugs, caffeine, nicotine, antidepressants),
  - D. neurological disorders (e.g., head trauma, whiplash, multiple sclerosis, vestibular schwannoma),
  - E. psychological disorders (depression, anxiety), and
  - F. infectious and neoplastic disorders (syphilis, acoustic neuroma, autoimmune diseases, acquired immune deficiency syndrome).
- II. Objective tinnitus - refers to noises that can be heard by an examiner when a stethoscope is placed against the patient's external auditory canal. Objective tinnitus usually has a vascular or mechanical origin.

The treatment of tinnitus often depends on the severity of the patient's condition. Treatment for tinnitus is supportive, as there is no cure. Several methods of treatment have been proposed. These treatments include, but are not limited to:

- I. acoustic neural stimulus (e.g., Neuromonics Tinnitus Treatment),
- II. alternative therapies (e.g., acupuncture, herbal preparations such as Ginkgo biloba, hypnosis),
- III. biofeedback,
- IV. cognitive behavioral therapy,
- V. drug therapy (e.g., misoprostol, botulinum toxin A),
- VI. electromagnetic energy,
- VII. hearing aids and cochlear implants,
- VIII. hyperbaric oxygen therapy,
- IX. masking with a tinnitus masker device,
- X. sound therapy,
- XI. tinnitus coping therapy,
- XII. tinnitus retraining therapy (TRT),
- XIII. transcranial magnetic stimulation,
- XIV. transcutaneous electric nerve stimulation (TENS), and
- XV. transmeatal laser irradiation

Masking, with the use of a masker device, is used to "cover-up" the tinnitus perception with a competitive signal that either partially or completely competes with or conceals the tinnitus. This can be achieved by a number of methods, ranging from environmental masking to ear-level worn sound generators. There are commercially available recordings of a wide range of sounds that can provide complete or partial masking.

Tinnitus Retraining Therapy (TRT), also known as Habituation Therapy or the Jastreboff Method, is a neurophysiological approach to treating patients with tinnitus. TRT depends upon the natural ability of the brain to "habituate" a signal, to filter it out on a subconscious level so that it does not reach conscious perception. TRT is a treatment approach aimed at reducing the individual's reaction to tinnitus or training them to ignore it through sound therapy and directive counseling.

- I. Sound therapy involves the patient being fitted with a device called a sound generator (white noise); which is designed not to mask or cover the sound of the tinnitus, but serves to reduce the contrast between the patient's tinnitus and the acoustic environment in an effort to retrain the patient's response to tinnitus.
- II. Directive counseling is used to gradually remove the meaning from the tinnitus signal allowing it to become a neutral stimulus.

### **RATIONALE**

Several studies have been published addressing the various proposed modalities for the treatment of tinnitus. The various methods of treatment studied did not prove to be effective in the treatment of tinnitus. Clinical research in the form of appropriate study design, adequate sample size, careful choice of outcome measures and long term follow-up is lacking to support the efficacy of tinnitus treatments.

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**Masking** - While several large case series have reported positive results of tinnitus maskers, placebo-controlled trials are required to evaluate the extent of the expected placebo effect. No recent randomized, placebo-controlled trials were identified in a literature search.

**Tinnitus retraining therapy (TRT)** While Jastreboff has published the theoretical rationale behind tinnitus-retraining therapy, no controlled trials were identified in a search of the literature. Other articles were identified, but these studies were either focused on tools to evaluate the results of tinnitus retraining or consisted of uncontrolled trials. The lack of controlled studies does not permit scientific conclusions.

**Transcranial Magnetic Stimulation** – Poreisz, et al. (2009) studied the effect of theta-burst stimulation (TBS), a novel repetitive transcranial magnetic stimulation (rTMS) paradigm, in 20 chronic tinnitus patients. Tinnitus severity and loudness were monitored using a tinnitus questionnaire (TQ) and a visual analogue scale (VAS) before each session. Patients received 600 pulses of continuous TBS (cTBS), intermittent TBS (iTBS) and intermediate TBS (imTBS) over the left inferior temporal cortex with an intensity of 80% of the individual active or resting motor threshold. Changes in subjective tinnitus perception were measured with a numerical rating scale. Although half the patients reported a slight attenuation of tinnitus perception, group analysis resulted in no significant difference when comparing the three (3) types of TBS. Only cTBS resulted in a significant short-lasting improvement of the symptoms. In addition there was no significant difference when comparing the responder and non-responder groups regarding their anamnestic and audiological data. The TQ score correlated significantly with the VAS, lower loudness indicating less tinnitus distress. The authors concluded TBS does not offer a promising outcome for patients with tinnitus in this study.

Similarly, Weise et al (2016) randomized 124 patients with severe tinnitus-related distress to therapist-guided Internet-delivered cognitive-behavior therapy (ICBT) or to a moderated online discussion forum. For the primary outcome of tinnitus-related distress, there was a significant interaction of time by group that was supported by large effect sizes (THI standardized effect size [SES], 0.83; 95% CI, 0.47 to 1.20; TQ SES=1.08; 95% CI, 0.71 to 1.64). For the secondary outcomes, Hospital Anxiety and Depression Scale (HADS), Tinnitus Acceptance Questionnaire, and Insomnia Severity Index, small-to-medium effect sizes were found. Benefits in the ICBT group were clinically significant and maintained at 6-month and 1-year follow-ups. The strengths of this trial included power calculations and adequate follow-up rates, along with randomization by an independent researcher. However, neither patients nor evaluators were blinded to treatment condition, and the control group crossed over to ICBT after the treatment period, limiting interpretation of the 6-month and 1-year follow-ups.

In 2016, Stein et al reported on a double-blinded and adequately powered RCT of notched music training in 100 participants with tonal tinnitus. There was no restriction for age or magnitude of hearing loss, and randomization was stratified for these factors. Participants provided their preferred music and were advised to listen for two successive hours a day for three (3) months. The active treatment removed one half octave around the tinnitus frequency, while amplifying the edge frequency bands by 20 dB. The placebo treatment consisted of music with a moving notch. The primary outcomes were tinnitus perception (loudness, annoyance, awareness, handicap) measured with total VAS scores and tinnitus distress on the THQ. No effect was found for the primary outcome measures by either ITT or per protocol analysis, although the subscale of tinnitus loudness was reported to be reduced.

2017 Ashtiani et al, in a triple-blind randomized clinical trial conducted the study of 112 patients to compare the rates of recovery from idiopathic sudden deafness after the treatment with oral and intratympanic corticosteroids in both mono and combination therapies. The conclusion of the study did not find any difference in the rate of hearing improvement between systemic, intratympanic, and combined corticosteroid therapy for sudden hearing loss.

### **CODES**

- *Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*
- ***CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.***
- *Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.*

**Medical Policy: TREATMENT OF TINNITUS****Policy Number: 8.01.07****Page: 4 of 5****CPT Codes**

Code	Description
92625	Assessment of tinnitus (includes pitch, loudness, matching and masking)
<b>The following CPT codes are investigational (E/I) for the ICD10 diagnoses listed below:</b>	
92626	Evaluation of auditory rehabilitation status; first hour
92627	each additional 15 minutes
92630	Auditory rehabilitation; prelingual hearing loss
92633	postlingual hearing loss

*Copyright © 2019 American Medical Association, Chicago, IL***HCPCS Codes**

Code	Description
No code(s)	

**ICD10 Codes**

Code	Description
H93.11-H93.19	Tinnitus (code range)

**REFERENCES**

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\*Key Article

**KEY WORDS**

Habituation therapy, Jastreboff method, Masking, Tinnitus retraining therapy

**CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS**

The Centers for Medicare and Medicaid Services had a longstanding national coverage determination (NCD) for tinnitus masking, which was considered an experimental therapy because of the lack of controlled clinical trials demonstrating effectiveness and the unstudied possibility of serious toxicity in the form of noise-induced hearing loss. The NCD was retired in 2014.

Based on our review, there is currently no Local Coverage Determination (LCD) or National Coverage Determination addressing treatment of tinnitus.