

# MEDICAL POLICY

MEDICAL POLICY DETAILS	
Medical Policy Title	Treatment of Tinnitus
Policy Number	8.01.07
Category	Technology Assessment
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Archived Date	03/21/02-04/20/06 and re-archived 3/19/09
Archive Review Date	12/21/23
Product Disclaimer	<ul style="list-style-type: none"> <li>• <i>Services are contract dependent; If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.</i></li> <li>• <i>If a commercial product (including an Essential Plan or Child Health Plus product), medical policy criteria apply to the benefit.</i></li> <li>• <i>If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.</i></li> <li>• <i>If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) 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.</i></li> <li>• <i>If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.</i></li> </ul>

## POLICY STATEMENT

Based upon our criteria and assessment of the peer-reviewed literature, no proposed treatment modalities for the treatment of idiopathic tinnitus have been medically proven to be effective and, therefore, such treatment modalities are considered **investigational**.

*Refer to Corporate Medical Policy #2.01.09 Biofeedback*

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

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

*Refer to Corporate Medical Policy #11.01.03 Experimental or Investigational Services*

## POLICY GUIDELINES

For patients with tinnitus and hearing loss, in which hearing aids are prescribed to treat the hearing loss, benefits will be provided for hearing aids in accordance with the member's subscriber contract.

## 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 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 results when parts of the brain concerned with analyzing sound signals focus on weak messages that, 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.

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Tinnitus is divided into two major categories, based on the source of generation: 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.

The two types of classification for tinnitus are:

- 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.

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The purpose of transcranial magnetic stimulation is to provide a treatment option that is an alternative to or an improvement on existing therapies in individuals with tinnitus.

### **RATIONALE**

Several studies have been published that address 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.

#### **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 of the patients reported a slight attenuation of tinnitus perception, group analysis resulted in no significant difference when comparing the three types of TBS. Only cTBS resulted in a significant, short-lasting improvement of the symptoms. In addition, there was no significant difference in anamnestic and audiological data in the responder and non-responder groups. The TQ score correlated significantly with the VAS, lower loudness indicating less tinnitus distress. The authors concluded that TBS does not offer a promising outcome for patients with tinnitus.

Similarly, Weise et al. (2016) randomized 124 patients with severe tinnitus-related distress either 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, which 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 were maintained at six-month and one-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 six-month and one-year follow-ups.

In 2016, Stein et al. reported on a double-blinded and adequately powered randomized, controlled trial (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 per day for three months. In the active treatment group, half an octave was removed around the tinnitus frequency, while edge frequency bands were amplified by 20 dB. In the placebo group, 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 Tinnitus Handicap Questionnaire<sub>2</sub> (THQ). No effect was found

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for the primary outcome measures by either intention-to-treat (ITT) analysis or per protocol analysis, although the subscale of tinnitus loudness was reported to be reduced.

In 2017, Ashtiani et al., in a triple-blind RCT, conducted a study of 112 patients, comparing the rates of recovery from idiopathic sudden deafness, after 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.
- Code Key: Experimental/Investigational = (E/I), Not medically necessary/ appropriate = (NMN).

#### 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 function for surgically implanted device(s) candidacy or postoperative status of a surgically implanted device(s); first hour
92627	each additional 15 minutes
92630	Auditory rehabilitation; prelingual hearing loss
92633	postlingual hearing loss

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#### 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, transcranial magnetic stimulation

**CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS**

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