Non-Pharmacological Treatments for Tinnitus and Hyperacusis

Policy Number: 0019
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Next Review: May 2027
Specialist Reviewer: John Goddard, MD

BACKGROUND

CLINICAL BACKGROUND *(excerpted from Fuller 2020)*

Tinnitus is defined as the perception of sound in the absence of a corresponding auditory source (Jastreboff 2004). It is typically described by those who experience it as a ringing, hissing, buzzing or whooshing sound and is thought to result from abnormal neural activity and connectivity in auditory and non-auditory pathways, which is interpreted by the brain as sound (Elgoyhen 2015, Shore 2016). Tinnitus can be either objective or subjective. Objective tinnitus is estimated to occur in up to 10% of people with tinnitus seeking help (Kircher 2008) and refers to the perception of sound that can also be heard by the examiner (Roberts 2010). Objective forms include heartbeat synchronous pulsatile tinnitus, and they usually have a detectable cause such as arteriovenous malformation, carotid stenosis or dissections (Langguth 2013).

Specific medication or surgical treatment can lead to the cessation of the objective tinnitus percept (Kleinjung 2016). Most commonly, however, tinnitus is subjective, meaning that the sound is only heard by the person experiencing it and no source of the sound can be identified (Jastreboff 1988). Subjective tinnitus (the focus of this review) is estimated to affect up to 21% of the general adult population, increasing to as many as 30% of adults over 50 years of age (Davis 2000, Gallus 2015, Kim 2015). It can be experienced acutely, recovering spontaneously within minutes to weeks. However, it can become chronic and is unlikely to resolve spontaneously when experienced for three months or more (Hahn 2008, Hall 2011, Rief 2005). In 1% to 3% of the population tinnitus causes severe problems with daily life functioning (Davis 2000, Kim 2015). Although a range of psychological, sound, electrical and electromagnetic therapies have been developed, currently there is no reliable cure for subjective tinnitus.

POLICY AND CRITERIA

Coverage Guidance: Non-pharmacological treatment for tinnitus and hyperacusis may be excluded from coverage. Check CM for exclusions or limitations.

Source	Policy
For Medicare Members	
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article	None
Kaiser Permanente Medical Policy for Medicare Members	Policy 0019 applies. Due to the absence of an NCD or LCD, Kaiser Permanente has chosen to use their own Clinical Review Criteria, "Non-Pharmacological Treatments for Tinnitus and Hyperacusis" for medical necessity determinations. Use the criteria below.
For Medicaid Members	
OR Medicaid	Policy 0019 does not apply.
WA Medicaid	Policy 0019 does not apply

For Commercial Members and Self-Funded Members	
OR Commercial	Policy 0019 applies
WA Commercial	Policy 0019 applies
Self-Funded Plans	Policy 0019 applies

Cognitive-behavioral therapy (CBT) for tinnitus may be considered medically necessary for individuals scoring a minimum of 18 on the tinnitus handicap inventory (THI).

All other non-pharmacological treatments for tinnitus are considered experimental and investigational, including (but not limited to) neuromodulation devices, patient education, masking, and biofeedback.

All treatments for hyperacusis in the absence of comorbid tinnitus are considered experimental and investigational.

RATIONALE

EVIDENCE BASIS

A 2020 Cochrane review analyzed the findings of 28 studies relevant to treatment of tinnitus with cognitive-behavioral therapy. That high-quality review reported that CBT may effectively improve quality of life in the short term, but long-term data is lacking. Adverse events were found to be uncommon. Evidence for other outcomes, including anxiety, was insufficient. CBT was more effective than no treatment, based on an average 10 point decrease on the tinnitus handicap inventory (THI), for which a decrease of 7 or more points is considered to be clinically significant. Compared to other interventions for tinnitus, CBT was more effective than audiological care (5 point greater decrease on THI), tinnitus retraining therapy (15 point greater decrease on THI), and other active controls (including relaxation and support groups). The authors' conclusions are outlined below:

"The main results of this review indicate that cognitive behavioural therapy (CBT) may be effective in reducing the impact of tinnitus on quality of life at the end of treatment, and that there are few if any adverse effects from receiving CBT (although further research on this is recommended below). These results provide further evidence or justification for recommendations made in two prominent clinical guidelines endorsing the provision of CBT for patients with chronic bothersome tinnitus (Cima 2019; Tunkel 2014). Consequently, policy-makers and service providers should feel confident that CBT for tinnitus is beneficial for patients at least in the short term. This is not to say, however, that CBT is an easy form of treatment to engage in; it is often personally challenging and can require a considerable investment of time and money from the patient (assuming that CBT is even available and/or covered by insurance in a given country).

CBT for tinnitus appears to have some benefit for people who also experience depression, but the effects are small and there are some concerns with regards to the quality of the evidence. Thus, in addition to receiving tinnitus-specific CBT, people with co-morbid depression should also seek depression-specific treatment. Overall, there is either low-certainty evidence, small effects and/or an insufficient amount of evidence currently to recommend CBT for tinnitus if the primary intention is to improve anxiety or general quality of life, or to change negatively biased interpretations of tinnitus.

CBT for tinnitus delivered in person and delivered via the Internet, with some additional email communication from a professional, appear similarly effective, as does CBT delivered individually and group-wise. Alternative modes of delivery should be considered depending on patient preference, accessibility and cost.

There is insufficient evidence to support a recommendation for whom should provide CBT for tinnitus, although it is noted that psychologists and/or psychiatrists were involved in the design, conduct and/or supervision of all CBT treatments.

The results from this review are relevant to tinnitus patients with varying levels of hearing loss and thus they should also be eligible to access treatment. We do not know, however, to what extent the study populations represent the whole patient population.
It is important to keep in mind that approximately half of the included studies in the review only reported group-level data/ analyses. This means that the results represent an average of the outcomes for participants in the study. In other words, on average, people improved receiving CBT compared with waiting for it (tinnitus) to get better, or another available treatment. It is likely that individual patients might respond better or worse than the average treatment effects reported here and that patients should make informed choices aligned with personal preference where possible."

A 2021 assessment of the effectiveness of Tinnitus Retraining Therapy (TRT) produced for KP Southern California's Medical Technology Assessment Team (MTAT) identified 7 studies (5 RCTs and 2 quasi-experimental clinical studies) involving 620 patients. The report concludes that these studies suggest a benefit of TRT for improving tinnitus symptoms, severity, and function compared to partial TRT, structured counseling, tinnitus education, or provision of resources as part of standard care. MTAT indicates that the findings should be interpreted with caution because the overall quality of the evidence was rated "low" for all key outcomes. All identified studies were determined to be at serious risk of bias due to lack of well-described random sequence generation, allocation concealment, and/or blinding. Additionally, across the studies there was substantial heterogeneity regarding TRT directive counseling protocols in addition to the magnitude and significance of estimated effects (SCPMG Evidence-Based Medicine Services 2021).

A 2024 assessment of the effectiveness and safety of auditory and tongue bimodal neuromodulation **(Lenire® System)** produced for KP Southern California's Medical Technology Assessment Team (MTAT) identified 4 studies (2 RCTs and 2 observational studies) involving 849 adult patients with chronic subjective tinnitus. The report concludes that low-certainty evidence suggests that this device alleviates tinnitus symptoms in adults with chronic tinnitus and that the device was well-tolerated with no report of severe adverse events related to use of the device. No available studies provide head-to-head comparisons of the device with other active treatments, sham, or no treatment controls for tinnitus. The certainty of the evidence was downgraded to "low" due to individual study risk of bias (e.g., lack of active or no-treatment controls, varied treatment protocols across studies and variation in follow-up duration), imprecision from the small number of studies and small sample sizes, and possible publication bias due to the manufacturer's sponsorship and/or funding of studies. (SCPMG Evidence-Based Medicine Services 2024).

CODES

CPT Code	Description
90832-90840	Psychotherapy
ICD-10 Code and Description	
H93.1 Tinnitus H93.11 Tinnitus, right ear H93.12 Tinnitus, left ear H93.13 Tinnitus, bilateral H93.19 Tinnitus, unspecified ear H93.A Pulsatile tinnitus H93.A1 Pulsatile tinnitus, right ear H93.A2 Pulsatile tinnitus, left ear H93.A3 Pulsatile tinnitus, bilateral H93.A9 Pulsatile tinnitus, unspecified ear H93.23 Hyperacusis H93.231 Hyperacusis, right ear H93.232 Hyperacusis, left ear H93.233 Hyperacusis, bilateral H93.239 Hyperacusis, unspecified ear	

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