

## An overview on Tinnitus

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### ABSTRACT

Tinnitus—the perception of sound in the absence of an actual external sound—represents a symptom of an underlying condition rather than a single disease. Tinnitus is defined as a phantom auditory perception—it is a perception of sound without corresponding acoustic or mechanical correlates in the cochlea. Tinnitus represents one of the most common and distressing otologic problems, and it causes various somatic and psychological disorders that interfere with the quality of life

**Keywords:** Tinnitus, Sensorineural hearing loss, Sound therapy, Principle effect

### DESCRIPTION

Tinnitus is the perception of sound in the absence of exogenous sound stimulation, and widely accepted consensus guidelines divide tinnitus into objective tinnitus and subjective tinnitus. Objective tinnitus is defined as tinnitus associated with an identifiable organic cause other than sensorineural hearing loss. In contrast, subjective tinnitus is an idiopathic symptom that may or may not be associated with sensorineural hearing loss.

Tinnitus does not represent a disease itself but instead is a symptom of a variety of underlying diseases. Otologic causes include noise-induced hearing loss, presbycusis, otosclerosis, otitis, impacted cerumen, sudden deafness, Meniere's disease, and other causes of hearing loss [1]. Neurologic causes include head injury, whiplash, multiple sclerosis, vestibular schwannoma (commonly called an acoustic neuroma), and other cerebellopontine-angle tumors. Infectious causes include otitis media and sequelae of Lyme disease, meningitis, syphilis, and other infectious or inflammatory processes that affect hearing. Tinnitus is also a side effect of some oral medications, such as salicylates, nonsteroidal anti-inflammatory drugs, aminoglycoside antibiotics, loop diuretics, and chemotherapy agents (e.g. platin and vincristine). Temporomandibular-joint dysfunction and other dental disorders can also cause tinnitus.

Tinnitus has high incidence according to epidemiological data, and 10–15% of adults have long-term tinnitus, and in about 6–25% of patients the tinnitus interferes with their daily life[2]. Negative impacts of tinnitus include sleep disturbance, poor concentration, distress, depression, and anxiety. Consequently, restrictions caused by tinnitus might result in difficulties at work,

at home, and in social relationships, thus reducing a person's quality of life.

Many attempts have been made to treat or even cure tinnitus, but no treatment or intervention yet offers a completely satisfactory solution[3]. Current methods for the clinical management of tinnitus involve (a) education and counseling, (b) relaxation techniques, and (c) the use of sound therapy. The effectiveness of sound therapy in changing the tinnitus perception has been recognized for centuries, and in recent decades, the use of sound or sound enrichment to mask or suppress tinnitus or to disrupt the neural activity that causes tinnitus has become a central part of the clinical management[4]. Currently, most tinnitus treatment strategies aim at reducing the tinnitus-associated distress, and there is a lack of treatment approaches for eliminating the tinnitus directly. Sound therapy is a widely used tinnitus management method that uses sound stimulation to promote the reorganization of the cortex with or without masking tinnitus, and such therapy is expected to completely eliminate tinnitus [5].

### CONCLUSION

Sound therapy is a non-invasive treatment with broad applicability. After intervention is ruled out for a medically manageable disease or other contributing medical problems, almost all patients qualify for treatment. Sound therapy can effectively suppress tinnitus, at least in some patients, but there is still a lack of research on the efficacy of sound therapy. It is necessary to analyze the characteristics of individual tinnitus patients and to unify the assessment criteria of tinnitus. Further studies are needed to determine the most effective forms of sound

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therapy for individual patients, and large multicenter samples and long-term follow up are still needed to develop more accurate and targeted sound-therapy schemes.

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